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SPECIAL ARTICLES.

SOME ASPECTS OF MEDICAL EDUCATION.¹

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It is no trifling occasion that draws together from the uttermost parts of the country one-fifth of an organization of a profession that is taxed to its utmost in the prosecution of its duties. It is not with sounding trumpets and tinkling cymbals that from the sorrowing bedside—whether in the hovel of the poor or the palace of the rich—from the excitement of the operating room, from the stimulus of the hospital ward or the quiet but inspiring haunts of the laboratory this assembly gathers. That it is possible is a handsome tribute to the noble animus in which are embodied a spirit of inquiry, a thirst for knowledge, a longing for inspiration, a desire to uplift and to be uplifted that pervades the profession. The event is one that should be fraught with the dignity, the inspiration, one might almost say solemnity, befitting a symphonic march. For such animus, fellow members, we have just cause for self-congratulation.

It scarcely need be reiterated here that the spirit which pervades such a meeting is the outcome of that evolution which began with the introduction of precision in medicine. Just as soon as the art of medicine had for its foundation the science of medicine, the possibility of harmonious medical organization arose. When "rule of thumb" or intuition gave way to precision; idealism to realism; when speculation was displaced by fact; when, in short, inductive methods were employed and honest inquiry became the guiding star of action, then harmony could sit in council.

With medical, as with all organizations made up of human elements, it would be only human if not pervaded by the essence of science—truth. Hence with the latter wanting, jealousies and ambitions, self and selfishness would prevail to the end that the true object of organization—a fraternal spirit and conscientious seeking for truth—would be as a flickering flame. A little observation will show that that society, whether county, state or national, that does not have this true reason for its existence, for its guide of action, will be a failure. The reverse is also true that that organization which may be called unsuccessful and unhappy, of snarling men and backbiting colleagues, can be labeled at once as without its true vocation, to the discredit of its members.

The great heights to which our organization is rising rapidly precludes the activities of such as have self for their basis of action, so that each day we see more and more a noble rivalry of its members to do the utmost and the best for the organization; a healthful vying of one another for its welfare. Self and selfishness are looked at askance; partisanship and faction, save for a common end—the welfare of the Association—are memories.

But, fellow members of the Association, at this the fifty-fifth session of our Association we have other causes for congratulation and felicitation. We are on the eve of a union of all the members of the profession

in one harmonious organization, each individual of which is willing and proud to consider his fellow a gentleman until he is proved not to be, and not, as of yore, a knave until he is proved to be a saint. We are reaping the rewards of that untiring committee which gave to us this organization with which we now labor. We are prospering beyond measure and gathering a force scarcely to be estimated, in great part as a result of the untiring efforts of the apostle of organization—our McCormack. To say that thirty-four States have adopted the uniform plan of organization, and "that membership in the reorganized States has increased 400 per cent. and enthusiasm," writes our coadjutor, "ten-fold more," is enough. We are standing out in our own manliness with the majesty that belongs thereto because of the sentiments expressed when our broadly inspired committee voiced the unanimity of feeling which belonged to the Association, in our principles of ethics. We are letting our light shine through the instrumentality of that genius of medical editors—our Simmons. From five thousand to twenty thousand in less than a decade is a statement of circulation which appals and at the same time arouses a feeling of pride and stimulates to further effort, increased all the more when we reflect that the scientific value of the articles in *The Journal of the American Medical Association* are surpassed by none of its contemporaries; its tone is emulated by all.

Such causes for congratulation bring to this Association greater responsibilities and weightier problems for solution. It is held to be the bounds of this address to indicate responsibilities, some trite and apparently trifling, others most weighty; to point out duties, many so grave and vast, beyond the powers of your official to justly define.

NECROLOGY.

Before passing to the task let us pause a moment and with due reverence take cognizance of our colleagues who have since our last meeting gone to the great majority. The Silent Reaper has been as rapacious as in the past, and more than fifteen hundred fell in his swath. He has spared neither the humble nor the great. The less conspicuous but just as potent laborers in the vineyard can say with the others: "I have fought a good fight, I have finished my course, I have kept the faith."

Of those who have been honored by this Association in the past we lost two ex-presidents, the hearty, rugged, yet withal gentle and kindly Donald MacLean, surgeon and teacher, and the urbane James Farquhar Hibbard, a revered general practitioner and teacher; two ex-vice-presidents in John Bates Johnson, one of the founders of the Association, a great practitioner, an honored teacher, and Isaac Newton Love, genial and magnetic. From the ranks we lost Edmund Andrews, scientist, pioneer in surgery and medical education in the West; George Julius Engelmann, obstetrician, scientist, litterateur, teacher, honored at home and abroad by membership in great organizations; James McFadden Gaston, pioneer in the surgical treatment of affections of the gall-bladder and gall-ducts, an esteemed practitioner; Franklin Staples, Hamilton Atchison West, Orpheus Everts, each obtained prominence and respect by force of character and natural attainments; Emile A. de Schweinitz, scientist and brilliant investigator, laboring not for his own renown but for that of his profession,

¹ President's Address at the Fifty-fifth Annual Session of the American Medical Association at Atlantic City, June 7 to 10, 1904.
² Courtesy of the Journal of the American Medical Association.

passing away at the threshold of a most promising career; Frank Savary Pearce, untiring and enthusiastic, who had been expected to counsel with us this week.

HOUSE OF DELEGATES.

The conduct of business under the new constitution bodes success. The two years of trial have indicated that to the House of Delegates the greatest responsibilities fall. When its members consider the great power the American Medical Association will have for weal or woe in the future and that the great body gives that power almost unstintingly to the delegates, they should justly realize the honor and confidence bestowed on them. With such realization will come honest purpose and deliberate action. All the county and state organizations must appreciate the vast duties to be undertaken and the breadth of view, deliberation and wisdom essential to their correct performance, and consequently select from their number the best of their possessions. Let us as an organization see to it that honor and homage come to those who labor unceasingly in the House of Delegates.

NATIONAL LIFE.

It can be readily seen that an organization of the magnitude and with the object and the spirit of our Association must in justice to itself and duty to its country take part in its social and political life. In order that we can be in touch with such life it would be well for the Association to devote some time to the discussion of broad general topics. We have provided for discussions at this meeting, the advisability of which may be termed tentative. We feel they can be productive of great good, and if the experience on this occasion is the least encouraging, we would urge their continuance. We had hoped to have government officials take up matters pertaining to the relation of the medical profession to the executive, legislative and administrative departments of the government. The exigencies of politics forbade our obtaining the services of those worthy to address this body. All men of political affairs are too busy at this juncture. At other times we may learn with profit from our rulers and law makers. As arranged for this week, so in various parts of the country in which the meetings are held, broad topics of general interest, perhaps with local flavor, could be discussed. From those in the Far West we might learn much of climate or how to conquer the plague or the medical aspect of "the yellow peril." The good judgment of the committee, or the President, can be relied on to select topics suitable to the occasion.

It is needless to refer to the demands that will be made on us by the nation in the future. You will learn through the representatives of the Army, the Navy and the Marine-Hospital Service what is expected of us. My distinguished predecessors, Reed, Keen and others, have pointed out our possibilities for good in the legislative halls of county, state and nation. We must have care never to be partisan or factional toward the weighty matters we will have to decide. We must realize that the power we have may be our undoing. We must realize that we are entering on dangerous ground and that it would better become us to be bidden rather than to intrude ourselves into such territory. Indeed, one may tremble not a little at the possibilities of our development in the wrong direction. So long, however, as we hold true to the spirit which comes out of devotion to science we need not fear.

THE SECTIONS.

The work in most of the sections the past few years bears favorable comparison with that of coordinated organizations throughout the country. To inflict dis-

cussion concerning them on this general meeting is, we realize, somewhat of a hardship. Your indulgence is craved, however, for through your medium alone can the sections be reached, while peradventure the work of these sections is fully as important as that of any branch of our Association work. If you will look into it you will find the rise of the Association came with the development of section work. To enhance the value of such work is, therefore, to uplift the organization. The present methods are worthy of trial for a few years just as we should not make haste in changing the new constitution. Regarding it, may we suggest thought along these lines?

1. The continuance of the secretary for a term of years.

2. The collaboration of sections so that one topic can be exhaustively considered at the meeting of the Association without repetition in other sections. For this purpose the officers of the sections should meet for consultation six or eight months before the annual meeting. We feel we did good work by having our distinguished chairmen and secretaries come together last October.

3. The division of the Association into two main sections for work in the mornings, that of (a) *medicine*, including pathology, diseases of children, nervous and mental diseases, materia medica, stomatology, cutaneous medicine and sanitary science; (b) *surgery*, including obstetrics, gynecology and the more closely related surgical specialties. The members interested in diseases of the eye or nose or throat could contribute to either section the result of any studies related to the respective section. The afternoons could be occupied by the specialized labor of the twelve sections now in existence.

Perhaps it might be thought better to have one morning, at the direction of the Section on Practice of Medicine, devoted to the discussion of general topics related to medicine, in which the entire Association could take part; another morning, at the direction of its secretary, to surgery; a third to the specialties; a fourth to sanitary science. The object is to secure the views of physician, surgeon and specialist on general topics. To instance a subject, as endarteritis, is to call up at once the possibilities for the internist, the surgeon and the specialist.

4. The sections should take up and organize special international congresses when the time is ripe for such meetings. Thus an International Congress of Dermatology could be managed by the correlated section of this Association. With the patronage of the American Medical Association any congress that could command such special energies and broad general support could not fail.

5. The section should name to the President a list of its members from which he could select, when asked, delegates to important national meetings or international congresses.

SANITARY SCIENCE.

The Section on Hygiene and Sanitary Science should receive greater support from the organization. It is the section which must bring us in closer touch with our national life. Through it and those devoted to it we ought to secure greater respect from the body politic, and hence more wholesome power for the welfare of the community. Through it the profession should learn to take greater interest in the work of sanitary officers throughout the country. The valuable address of Billings on "The Relation of Medical Science to Commerce" and that of Thompson on "The Economic Value of Medical Science" indicate the opportunities and responsibilities of the profession. The time has gone by when sanitary positions should be used for

temporary sources of income and obtained by political means. Such offices are growing more and more vital to the public welfare. They have not been attractive because the rewards have not been commensurate with the responsibility and the labor demanded. They should, we will admit, if looked at from the proper viewpoint, grant large compensation and the occupant should be guaranteed tenure of office not subject to party exigencies but dependent on value received. The fault is partly ours that such is not the case. In but few medical schools is there a serious attempt to educate sanitarians, consequently the physicians who engage in sanitary science in an amateurish way do not give a *quid pro quo*. It does not pay a community to hire them. In one of the large cities of this country it has been impossible for the health authorities to get men who were competent to take up health matters, even though the city was prepared to pay fair salaries. Speculation need not run riot in estimating what would occur in a few years if our universities would give sound practical courses of a broad character, including some engineering, some economics and other features which would round out the man. In preliminary and subsequently in the elective studies the student should not be tempted to go into the special lines of practice. He should have opportunity to go in for sanitary science and perhaps for government service in the Army, the Navy, or other departments. The communities would soon find the worth of men thus educated, and the demand, we would venture to predict, would outrun the supply. In proof of the former, we may cite the fine tribute given to Wende, of Buffalo, by the citizens, *en masse* and of one accord, for the work of self-sacrifice, of unselfishness and of worth as official of the health department. Our Association could as a body and in its constituent parts encourage the medical schools to make such training possible; they could educate the community to demand such services and insist that good compensation is to be allotted for it. The Section on Sanitary Science could take up this as one feature of its work.

But for a more grievous reason, the profession's attitude, there is public disrespect. Survival of the old dictum that a patient's woes are confidential, supports too often the attending physician in failing to realize his responsibility to the community while attending to the welfare of his client. For this, as well as too often for personal reasons, he readily connives with the patient to thwart civic authority, thereby endangering a community. Instead of aiding in securing respect for and obedience to the rules of his sanitary colleague he joins in opposing him. Candor must compel us to admit that too often he fears the advent of the health official may mean some disclosure of his own incapacity. It is fair to say the official on his part is often too ready to give advice, to sneer at diagnosis or rail at treatment. To inspire, therefore, wholesome respect toward these coworkers and establish an *esprit de corps* should be one of the educational prerogatives of this section. Were we to be called to account for duties undone, the sin of not fulfilling our obligation to the community in sanitary matters would doubtless be found the most conspicuous, the one most detrimental to its interests.

Again, if not too insistent, could not this section further educational exhibits in sanitary matters not unlike the superb exhibit last winter in Baltimore, conceived and conducted in the main by our present official of the Sanitary Section? The Association could not do better than issue a grant for the furtherance of this object.

THE SCIENTIFIC EXHIBIT.

It is gratifying to see the interest and success attendant on this new feature of section work. It is an-

other tribute to the belief in the permanent tenure of office of an official when we have the good fortune to get a good one. Attention is particularly called to this exhibit to ask the Association and the other sections to look to the conduct of somewhat similar exhibits. The Section on Ophthalmology showed the possibilities at the time of the Helmholtz anniversaries. When a section takes up a subject let us not have the clinical, pathological and therapeutical aspects alone discussed, but bibliographical and historical features brought out. Let such features be as national as possible. What a fine exhibition it would be to have in connection with, say typhoid fever, a loan collection of the pictures of authors and investigators, of the various editions of their works and of the material things with which they worked, illustrating the evolution of their knowledge of the subject. Who would not be thrilled by a picture of the wards of the old Pennsylvania Hospital where Gerhard worked, of the instruments or materials he worked with, how he lived and what he did; of the first editions of his works, indeed of the manuscript of them? We must confess to a quiver of delight, mingled with reverence, when permitted to handle the manuscript on which Stillé inscribed his communication to the Paris Society. This is not the time or place to indulge in a homily on the value of such exhibits, agreeable though it might be. Through them, as of biography and sculpture and painting, we keep in touch with our history. Foster efforts in these directions, gentlemen of the Association, grant liberally to sections their small demands on you, to the end that you will be stimulating the best instincts in our profession.

THE ASSOCIATION OF LIBRARIANS.

We are not far amiss when we call attention to an organization which in a quiet, unobtrusive way is bringing together the members of the profession on a common ground, where tares do not spring up and thistles do not blossom, but instead in an atmosphere clear, refreshing, invigorating. Jealousies do not thrive in libraries; books soften ambitions. No stronger, more liberal friendships can develop than those that come to book lovers. We owe a debt of gratitude to the Library Association and to its distinguished president, under whose fostering care the influence and power of the Association are unfolding as the hardy rose, exhaling like it a fragrance which cheers and stimulates. Of the many abundant works we owe him, none, we venture, will be more satisfying to him and more lasting for good than the work of the Association of Librarians. This Association should hold not its hand nor stint its heart in upholding its educational efforts.

THE RUSH MONUMENT.

Before this session adjourns, by proper ceremony, graced by the presence of the President of the United States, with an oration befitting the occasion by our distinguished colleague, Dr. Wilson, the monument erected by the Association to the memory of Benjamin Rush will be dedicated. The Association is to be congratulated on the completion of this tribute in perpetual bronze to one of the most distinguished of our countrymen. Not alone should we rejoice on the fruition of this agreeable task, but also because it augurs for the erection in the future of tributes to the memory of others full worthy of our reverence. The invigorating, stimulating influence that comes from having about us our heroes of the past in stone or bronze behooves this Association and its constituent bodies to strain every effort to encourage in this manner hero worship. It is due ourselves to perpetuate the inspirations, the thoughts, the feelings in the counterfeit presentment of our fellows. We are not of those who decry the world

because it has not recognized our Jenner, our Pasteur, our innumerable heroes either by reward in their lifetime or by permanent tribute. We do not begrudge the meed of praise and the plementous bounty which flow to our warriors and statesmen. It is true, their glory has been attained often by carnage, lives sacrificed to avenge some insult. It was not life that was at stake. It was principle or thought or feeling or, our misanthrope suggests, greed. What countless lives are sacrificed for aspirations; what thousands of innocents for national gain! So, to the actors who stand for such, unstinted regard is given. The public neither appreciates the loss nor the saving of life. Hence, so long as it does not come close to them, civic murders from bad hygienic conditions do not move them. Even when home is devastated they submit to that which they consider mystifying or providential, and merely go their way. They are callous beyond measure to the presence of epidemics. They do not consider for one moment the power they have to assuage the virulence or even wipe out the existence of pestilence. Every effort for amelioration, as we see in tuberculosis, comes from our profession. With such lack of appreciation of their own welfare we need not expect much appreciation from them of our efforts.

In all honesty, we must admit among ourselves, we may not deserve public appreciation. If we realize the truth we may make amends. Could the public be expected to revere and respect when, as usual in the past, perhaps too common now, the profession was divided against itself, not from principle but generally because of pocket, of sordid ambition, of devouring jealousy? Look ye to your county societies! Do the brethren dwell together in harmony? Go to the warfaring court rooms! Do we emerge from them respected and respectful of one another? Until such sores are healed, as they happily will be, when science—and hence liberality of mind and largeness of heart—is furthered by associations like ours, it must remain to us a cherished heritage and privilege to worship our heroes alone. When we learn to respect ourselves, then will we be respected.

MEDICAL EDUCATION.

The object of this Association shall be for the purpose of elevating the standard of Medical Education.

This Association has been, should be, and we trust will be the storm center of legislation for reform in medical education. Since the memorable editorials of Wood in the old *Philadelphia Times*, and the masterly papers and addresses of Pepper and the practical action of the University of Pennsylvania there has been virile progress. In most respects it seems definitely settled as to the course of education a candidate for the degree of medicine should take. Questions of pedagogy are still debatable, but we take it that that student who wishes the quickest returns, the most lasting remuneration, perennial stimulation of the intellect and continuous enjoyment in the pursuit of his labors, should take a college education of three or four years, a four years' course in medicine and, if possible, a hospital internship.

Reference need only be made to the reports to this Association, to the famous report of the majority committee of the Association of American Medical Colleges, to the numbers of the *Journal of the American Medical Association* comprehensively devoted to education, and to many recent admirable addresses in support of the statements.

There is talk about maximum and minimum requirements, about laboratory and hospital courses, the merits of didactic and clinical teaching—a mass of material

brought forth from the viewpoint of the educator, or looking to the welfare of the medical profession. We do not minimize the value of such lines of discussion. It has brought us to the position we have attained. But what of the medical student? Should we not look at education from his point of view? Is he quite able to decide whether he should take up the profession of medicine? We hold that a great duty is due the aspirant for medical honors from teacher and practitioner. It is a kindness due him to point out the best methods of securing such education as will yield him results commensurate with the time and expense required. It would be a greater kindness to be enabled to show him that by reason of intellectual temperament or of physical or moral qualities he is not likely to reap the rewards he is anticipating.

The large majority of medical students do not have a good reason for studying medicine. They are ignorant of the mental and physical demands made on them. They are attracted by an uncertain glamour and a specious glory, and heedlessly they go in. The failure of a large percentage of graduates in medicine to acquire more than a bare existence, and too often not even that, proves that they were not educated properly, not fitted temperamentally or physically, to pursue its duties. Should they not have opportunity for learning of the responsibilities and difficulties, rather than to have the brighter phases glorified? Would it not be well to have in our college curriculum a course of lectures for the student who contemplates entering a profession, pointing out the rocks and shoals in his prospective career? An eminent practitioner, not connected with medical schools, would light up and darken the pathway in due proportions. Then, too, should not, as in the Army and Navy, some physical tests be required? The trophy is to the robust, and sad will be the career of the man who is physically handicapped.

If there were any doubt about the value of a college degree to a man entering the medical profession it could be set at naught since the report of the Mosely Education Commission. Quotations like the following, while not pertaining to medicine alone, the result of extensive inquiry and mature deliberation, supported by the statistics they give, uphold the contention of a large employer, that "for 99 per cent. of the non-university men, it is hopeless to expect to get to the top." One opinion they express is that "there is still room for the boy of marked ability 'to come through,' but that his difficulties are greatly increasing, and that, useful as he is, his usefulness would have been greatly enhanced had he had the benefit of a college training." Still another commissioner reports that while only "one per cent. of the entire population of America has received a higher education in her colleges and universities, this one per cent. holds more than 40 per cent. of all positions of confidence, of trust and of profit." It is well known that the "geist" of the individual brings success, for which they say "it is recognized that the educated man takes in a wide horizon and puts more 'soul' into his work."

The essential of success in any department is diagnosis, which requires powers of intellectual penetration and discrimination. President Thwing has again forcefully urged that "the reasoning of the mathematics—and mathematics is only reasoning—tends to promote clearness and accuracy in perception, inevitableness in inference, a sense of logical orderliness. The study of the languages represents the element of interpretation. The study of history means the interpretation of life." Are these not the main studies of a college education? While they may promote scholarship, they surely cultivate thought. It need scarcely be pointed out to this

audience that to be a thinker is the salvation of the physician.

To the plea that the acquirement of a college degree takes up too much time and requires too much money, the material answer can be given from other sources to the effect that "the men whom you are surprised to find holding such important positions in factories, though not much over thirty years, are the very men who did not leave the technical college till they were twenty-three or twenty-four; the graduate may have been twenty-five before he donned a jumper, but in five years he learned more with the college training he had as a foundation than the regular journeyman of fifteen years of actual work in the shop." The experience of teachers who have watched the alumni agrees in that the college graduates get quick returns and soon acquire a position of independence.

The poor boy, therefore, need not be deterred, for if he has the spirit and energy to work his way through four years, two years or three years more will be but very little in the final summing up. If the student only knew that the purchase of the best education, whether reckoned in time or money, was the most economical investment, in that as to the former, a thorough education at first is time-saving in later years, and as to the latter, the money outlay is returned more quickly, in more immediate work and larger pay.

There should be one educational requirement—the equivalent of that for which a first-class college degree stands, whether received at a high school or university.

After entering the medical school with, it is presumed, the proper educational attainments, his career the first year should be closely watched. That school has too many students if it does not have enough instructors in the first year to be able to judge with a reasonable degree of accuracy of the character and moral stability of the men. This is not to be taken in a prudish sense or with too critical a scrutiny of habits which are the overflow of the animal spirits or the expiring exuberance of the boy approaching manhood. This can be said that a student who does not play fair in his exercises, who cheats in one demonstration or evades another, who does not show manliness, frankness and truthfulness in his first-year duties, will not be a good diagnostician. He will cheat himself; he will cheat his patient. The teachers of the first year, or at least the second, should know this and block the student there and then. It would be a kindness. Let us then agitate whether we should not have a certificate of manliness, a certificate of health as well as a certificate of mental proficiency, before we admit students to our medical schools or permit them to go beyond the first year. Let us not be decoys, alluring them on to later destruction, but rather be guardians, wrapping the strong arm of experience about them to lead them to the fitting pathway.

Having permitted the student to pass further in his pursuits, we still owe him much. We must see to it that such course is given him the first two years of his student career that he will acquire such fondness for the science of medicine, such reverence for the exploration of its truths, that until his dying day devotion to it will be his stimulus and solace. As a corollary, we must insist that medical schools secure the best men in the market for these places and pay them salaries commensurate with their ability—good living salaries.

It is in the first and second years of his career that the foundations are laid whereby the student becomes the medical thinker. To quote again: "The power of thinking should not be of a base and barren character. The thinking should represent and be concerned with a fine and rich content of knowledge. It should have the exactness of intellectual discrimination; it should

have the fulness of noble scholarship; it should embody a culture which is at once emotional and esthetic and ethical, as well as intellectual."

That a desire to relieve suffering, to extend sympathy, to save life, is the impulse of the physician, we all admit, but where is the man among us who will not also admit that a scientific habit more quickly brings it about and more surely sustains and fortifies the humane instinct through the trials and tribulations of exacting practice? That prosecution of professional duties soon becomes commercial that does not have for its basis a true spirit of scientific inquiry. How miserable must that life be which conducts an exacting, drudging, daily routine with only material reward in view. Few are the practitioners who have this sordid view; we can be as sure medicine would soon be forsaken if this viewpoint alone were considered. Hence in the laboratory of the first two years must be aroused and fostered the stimulus for lifework.

The final years should be clinical years, and the last should be in a hospital. The medical school that allows its students to think such opportunity is not due them is most unfair to them. As our schools are now constituted, most of them can not give such requirements. The students should know, however, such requirement is necessary. What has been said regarding the preliminary college education applies equally forcefully to the hospital training. He is thrice armed who enters the arena thus equipped. Medical schools that cannot give such education are cruelly unkind and unjust to the students by having them think it is not essential. Medical colleges that pass off a hospital training for one that is not truly such, fake their students. The student who pays well for his training has the right to demand such as to fit him for immediate action.

It is not the fault of the medical school alone that he can not get it. The public that cries out when there is mistake in diagnosis, fault in treatment, and that shakes its head at the deficient education of our students, must share the blame with the medical school. The public admits that its individual members may at any moment almost be at the mercy of a half-educated physician. It is not necessary to recount, for it is well known, how on land or sea, by day or night, some event may arise in an individual life, the care of which may mean life or death. Even with this knowledge they withhold means to relieve themselves. They admit the necessity of a hospital training. But they, and particularly the public in control of hospitals not used for teaching, say each medical college should have its teaching hospital. They do not appreciate that to give an education which involves a hospital course would require an expenditure of \$500 a year for four years by each student. It has been estimated that the cost of maintaining a plant and paying salaries sufficiently large to accommodate 600 students would require the above outlay by each student. Unfortunately, it is impossible to expect students to pay such figures, as it would render entrance into the profession almost prohibitive. It is manifestly impossible, as medical schools are constituted now, to educate all the students of the land properly. Hospital training can not be given except by a few favored institutions, because the doors of hospitals are closed either by the governing body of the hospital or by the teachers in the medical schools.

We believe, personally, if a decree should be issued that no medical school, including its hospital, should exist except on the fees derived from students, but little hardship would follow. The lessened supply of students would increase the demands on the practitioner, so that larger returns would follow. The poor student would sacrifice and strive to get a degree, knowing then

he had a good asset. A diminution in number and an increase in quality is demanded alike by the public and the profession. Such diminution in number would mean that the student would get back his investment quicker and in larger amount than at present, hence good men would be attracted. If we could abolish sentiment for sense and educate accordingly, there might be betterment all around. As it is now, medical students receive part of their education through the bounty of the state or the charity of the public, as such education can only be given in endowed institutions. The public is taxed so that the prospective physician can make a living. Is it right that it should be? Perhaps a mechanic should demand such right to make his son a good workman. We must all admit it is the duty of the state to educate the youth, so that good citizenship is maintained; we can question whether the state should educate the members to obtain a livelihood.

With the same indifference that the public views an epidemic's march they allow hospitals that are engaged in teaching to suffer for the want of funds. Moreover, they close their doors to the advent of teaching in the hospitals under their control. We must admit those who do not appreciate the true function of a hospital have some ground for their contention. Ruled by sentiment chiefly, unfortunately an impracticable master, they sympathize with the patient who still harbors the belief of old that the medical student is one of a class that prowl about not unlike harpies. The public does not realize the difference in the student of to-day and the student of tradition. We cannot hold to account the governing body of the hospital who has the point of view that it is harmful to a sick person to have them under the surveillance of an alleged student rabble. We must admit some patients become alarmed, particularly in institutions where they know they will have the sympathy of the governing body. An analysis of motive will show that the usual patient who will not allow a judicious amount of clinical demonstration when the sense of delicacy is not offended, is truly selfish, in that there is prevented that increase of knowledge and development of skill whereby suffering of others may be alleviated. A little encouragement from the officials would allay alarm on the part of the patient. The desire to help others is infectious, and when one yields in a word, others vie in the work.

The truth of the matter is that in hospitals in which teaching is carried on, rarely, if ever, do the patients complain. Indeed, it is the experience of those teaching institutions that judiciously conducted instruction is appreciated by the patient. In one hospital we might name most of the inmates are pay patients, giving \$7 a week willingly, because they know they are buying the services of the best practitioners in the land—the teachers of medicine—which service they could not get at tenfold the figure. The fact that teaching hospitals are overcrowded, not by the poor alone, but by people independent of charity, shows that clinical instruction is not a bugbear. If the governing boards would know that while a few patients might be alarmed, on the whole most of them would be gratified by the attention paid them, and their sense of rectitude and manliness appealed to by the satisfaction that they are doing some good in enlightening students, so that others could be relieved; that their administration would be stimulated to do work beyond criticism; that the nurses would be aroused to better activity while under the observation of those not connected with the hospital; that the internes would do their very best to have most complete studies of the case, and finally, that the chief in attendance, compelled to do his best at the risk of his reputation, they would gladly open their doors, even at the

discomfort of the few, but to the advantage of the many. In short, the hospital should have teaching not to oblige the medical school, but for its own survival and regeneration. The benefits the student derives by the object lesson of an orderly hospital can not be estimated. Will not every member of a hospital board admit that his own character, his own sympathies, have been benefited by his connection with the hospital, even though, perhaps, he has not the advantage of an impressionable age? Can he not see, therefore, how the youthful student can be influenced in thought and character and feeling? He cannot lightly toss aside this responsibility, nor even hide it by putting the onus of medical education on the teaching hospital. Every dollar endowing a non-teaching hospital robs the teaching hospital which is engaged in this larger duty.

It is true a class who are compelled to have hospital attention may not sympathize with this feeling. How can we obtain the confidence of this class? Let us organize such association of prominent people in our teaching centers who will agree to have any operation, any feature of disease witnessed by medical students, at the judgment of their attending physician. It would be well if the individuals of such an organization would agree, first, to undergo hospital treatment; second, to be the object of observation by students; third, to have an autopsy performed in case of untimely end. We feel sure that it would be wholesome individually and publicly if each would agree to ward treatment. Such association would rob hospitals of their terror and teaching of its dread. No one can deny that on the whole the public would be benefited from whatsoever point of view we look at it. Indeed, the public ought to learn that disease is an enemy to themselves and their country. Just as we make sacrifices in time of national warfare, so we should be willing to make sacrifices in the daily battle for life. Just as aristocrat and plebian, landlord and tenant, fight side by side in the former, so they should array in solid phalanx in the latter.

But there are hospitals willing to admit students, and yet the privilege is not availed of. This arises because the teaching force of the medical college is not willing to sink its personality and allow the student to go wheresoever he will for his instruction. Courage and some sacrifice is required perhaps. But, when one thinks of the mighty opportunity and the frightful waste, it is saddening. Every hospital should be a school. The fourth year should be so arranged that the student could avail himself of the advantages of hospitals in the immediate vicinity. Let each teaching body have the students understand what he must see and do, and trust you the true student will see it at the best place and with the best men. He must be accountable, of course, with a rigidity that means the exact acquirement of knowledge. To this end the first two years could be well spent in the properly equipped laboratory university, whether in town or country, the third in the authorized hospital of the school, the fourth in extramural hospital work.

Is it not anomalous that the hospital boards give to the nurses who are to act as aids to the physician the highest opportunities, and yet deny it to those who are to give orders to the nurses? This, of course, arises because training schools are the product of modern thought and have not been trammelled by tradition.

But all this talk of the primary education avails but little if we do not see to it ourselves that education is continuous; that from the day of our graduation, forwards, we do naught but toil, toil, toil. It should go without saying, as a mere business proposition, that unless we unceasingly labor but little of the fruits do we pluck. It is demonstrated in a practical manner,

for when we look about us and find the methods of those of our brethren whose labors are not in vain each one bears the scent of midnight oil.

The development of post-graduate schools, the growth of libraries, the groans of the printing press, the enthusiasm of medical societies, all testify to the spirit of persistent self-education that is abroad. It is not for me to urge further the importance of each of us taking from time to time months for study and reflection. Every active doctor should have his sabbatical year. We dare say, extended observations would support the belief that the gain is one hundredfold for each dollar invested in educational outings, and for every hour thus employed, ten is added to life. To finance a medical man from first to last successfully, we dare say, spend all net earnings of the first five years on self-education; after ten years, 10 per cent. of the annual net earnings for an assistant, continuing the 25 per cent. investment for five years. Health, happiness, increased usefulness to the community, a success, which never comes from eccentricity, equal to doubling capital every five years, would follow.

In the course of our work it is necessary for us to halt from time to time and review. Not alone must our mental storehouse be swept out, refurnished, but we must constantly "jack up," if the term is permissible, our mental and moral machinery. Few of us are there who will not find as our days grow fuller an unconscious tendency to slight our work, to become slipshod, to hurry over matters. It is partly an evidence of overwork. The post-graduate school is the salvation. No obstacle can withstand the continuity of drill, which the earnest of us keep in action. If, to continue the imposition, asked what element of character is perhaps lacking to the greatest detriment to the profession and public, we possibly, one and all, would say courage. This is seen in the hesitancy which members of the profession show in giving an opinion, in advising an operation and in asking for an autopsy. How much confidence is destroyed by the want of free, frank avowal of the physician that he does not know on the one hand, or of clear, precise statement of his judgment concerning a case on the other! The greatest success in life is confidence. How many lives are lost by the worker in internal medicine not advising early and unequivocally an operation for fear he might be wrong in his diagnosis! And how many more are lost because the surgeon lacks courage to do, either because he fears the patient may die and his record be marred, or because he may operate when it is not necessary! We must admit we have had some operations done when they were not required, but let it be said to the credit of modern surgery, we have never seen an operation of such character performed by the right man that did any harm to the patient. On the other hand, the resort to operative procedures early, and in cases that even yet are not considered of surgical relief, has saved lives and lessened suffering to a degree that far overbalances the now and then futile measure. It may be assumed, without contradiction, that every case of bad appendicitis that happens to get well without surgical relief has in its wake three to five that die for the want of an operation. In other words, the pernicious influence of a surgical case that recovers without operation is evident in creating the hope that other cases demanding operation might get well without it.

And the man who does not want an autopsy—not only the centers of courage need stimulation, but too often the entire medical storehouse needs refitting. Something best known to the physician himself, we trust, is lacking in the one who treats an obscure case for a day, six days, six weeks, and then does not want an autopsy. If true to himself, true to the demands of his profes-

sion, courage will not fail him. In our mental and physical round-up, we must see to it that courage is given a new backbone from time to time.

But, fellow members of the Association, not alone as members of this organization may we indulge in self-congratulation, but as members of a profession whose limitation knows no bounds, we may join in felicitation. Neither language, nor creed, nor country fetters our profession's munificent sway. The thoughts of Ehrlich, in Frankfurt; of our own Welch or Councilman, of Kitasato, in Japan, are correlated. The knife of Mayo in America, of Robson in London, of Kocher in Berne contributes to the relief of suffering in far Cathay. The founts of Lister's genius and Pasteur's divine inspiration bring countless blessings to England, to India, to France and to Africa. What a stimulus it is to realize that, howsoever small the contribution of the humblest of us may be, its impulse will be felt in climes near and far and ages present and remote! What awe cannot but overtake us when we consider each heart throb we study entwines us to Harvey of two centuries ago; with every percussion tone reverberates the sound of Laennec's voice of a century; with each vaccine inoculation, the simple observation and reasoning of Jenner to stimulate our question and deductions!

We rejoice together and cherish our history, by the warp and woof of which we are woven to the past. What heritage for us and our children! Dead must be the soul that wearies of communion with the spirits of the past; deep must be its slumber on which falls the thought of centuries; lethargic its activities that are aroused not by the deeds of heroic men! "Honor and fortune exist to him who always recognizes the neighborhood of the great, always feels himself in the presence of high causes." We worship together our science, devotion to which brings forth character, smothering egotism, levels pretension, drives our solitude, develops such loftiness of thought which can see that "against all appearances the nature of things works for truth and right forever." Of our art, let us see to it that when the final summons comes it can be said of us, "Greater love hath no man than this, that a man lay down his life for his friends."

THE ASSOCIATION OF SURGICAL LESIONS IN THE UPPER ABDOMEN.¹

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THE history of medical advance from the empirical treatment of symptoms to scientific expectancy, has been based on the study of death and modern research work. The spirit has been fine, although somewhat pessimistic. The great advances have been along the line of preventive medicine and in the elucidation of problems connected with the etiology of disease.

Surgical progress has been, to a certain extent, through similar channels; the spirit, however, has been one of magnificent optimism. The great advances in surgery have come from the clinical side, modern technic having enabled examination of primary conditions during life.

As a groundwork for the study of medicine the pathological laboratory and autopsy room offer unrivaled advantage, but they teach end results only. Who of us has not admired the precision with which a trained observer makes a diagnosis? A few days later one visits

¹ Oration on Surgery at the Fifty-fifth Annual Session of the American Medical Association, at Atlantic City, June 7 to 10, 1904.
² Courtesy of the Journal of the American Medical Association.

the autopsy room and here observes that this almost clairvoyant analysis was correct. At the same time, we must also acknowledge that the patient has not profited; it means a hundred pages of pathology and two meager lines of treatment. How many times do we notice in the autopsy revelation that the original lesion has been but slight, and at one stage easily curable, the pathology present largely the result of secondary complications and terminal infections.

The post mortem has been an institution for years, yet what did we know about appendicitis until surgery led the way, or about gall-stone disease, supposed to be an "innocent post-mortem finding," until operation opened up the field? Did knowledge of extrauterine gestation come from the autopsy? By no means. It was through the surgeon's knife, and why? Because secondary conditions so often mask the original lesion at the post mortem. On the contrary, our understanding of acute conditions causing sudden death has been brought about by dead-house investigations; for instance, fatal hemorrhage and perforation placed acute gastric ulcer on a sound foundation. Not so chronic gastric and duodenal ulcers with late death from complications, cholangitis from gall-stone disease, and chronic pancreatitis from the same cause. These conditions could not be correctly studied, excepting after death from accidental cause, and real progress lay dormant until surgery invaded the field.

From research work we have profited much; we are gaining rapidly by this means day by day; but we can not compare the animal to the man, nor can we always artificially create similar conditions. Like the post mortem, it has its limitations, yet these two fundamental methods have enabled us to advance. Without them we would still be in the middle ages. Now the time has arrived, in the light of these investigations, to view conditions from a new standpoint at a time when the lesion is in its infancy long before the post mortem, while the patient may be benefited and the research work applied to the elucidation of living problems.

The medical man must haunt the operating theater as he has haunted the autopsy room and the laboratory. The times have changed; we must have more treatment and less pathology. It is here that surgery wins its triumphs. We must not forget, however, that to physicians of pathologic training we owe the knowledge which enables us to approach the subject. Courvoisier was the real father of gall-stone surgery. It was Balzer, Fitz, Opie and others who cleared up the pathology of pancreatitis, and surgery followed their lead. It is in the union of the internist and surgeon that progress is most rapidly made, and in the readjustment of science the former will be the architect and the latter the master builder.

Once more the physician and surgeon will come together, and the mistakes of endeavor in new fields will receive timely correction at the hands of the pathologist and experimental worker.

The surgical borderland of to-day lies in the upper region of the abdomen, a locality until recently considered almost purely medical. What are the reasons for this invasion, and have the results justified the attempt?

Surgery must be judged on three grounds: First, the mortality of the operation itself and the question whether this is greater than under the expectant plan; second, the permanence of cure contrasted with medical treatment; third, the question of disability, either introduced by the operation itself or the natural length of time which the healing process involves.

On each one of these considerations we must answer yes, and we can go still farther and say that earlier operation would reduce the mortality and increase the permanence of cure and lessen the disability.

Certain parts of the body are so closely related in their anatomy, function and pathology as to be almost necessarily considered as part of the same system. The generative organs of women form so distinct a field of work as to have built up a specialty. Can we separate diseases of the kidney from the ureter, bladder and urethra? By no means. Each may stand in an etiologic relationship to the others which can not be ignored.

In the upper abdomen we have attempted to study the stomach independent of the associated organs, the liver and bile passages, the duodenum and pancreas. The result has been a confusion in diagnosis and treatment. The palm of a hand may cover a serious lesion of any one of these organs, and that, too, at the point of greatest liability; not only so, but any one of this group may start a pathological process which may extend to any one of the others, and with fully as great frequency as occurs under similar conditions in either the generative or urinary systems.

Note the disturbance of the stomach which occurs with gall-stone disease; the adhesions to the duodenum and the pancreatitis, an association direct as it is vital. Again, let me call attention to chronic ulcer of the stomach with adhesions to the pancreas, secondary ulcer of the duodenum adherent to the bile passages or gall-bladder. These are not fanciful pictures, but drawn from every-day work. I have no hesitation in saying that with an operative experience of over 1,400 cases of this description, mistakes in exact diagnosis are still common, and in many instances unavoidable. The history may be the only valuable diagnostic resource when the patient comes to us, and we all know how unreliable that may be. Given a history of painful attacks which have been very severe, but which have completely ceased, with tenderness on deep palpation in the epigastrium, and we may have disease of any one of these four organs, and not infrequently an association either direct or indirect of the pathologic process. If we clearly understand the possibilities of error, we are better prepared to meet complications or execute a change of front and operate on one organ when another procedure was planned. In the majority of cases a pathological diagnosis is possible, and one can say with certainty, "This is gall-stone disease," or "This is ulcer of the stomach"; but in a considerable minority a surgical diagnosis is the best that can be made. That is, we can say: "In this locality is a diseased process which requires operative treatment, the exact nature of which must be determined by incision." The patient does not come to us for the purpose of having a certain operation performed, but seeks relief from suffering and disability.

Let me call your attention for a few minutes to the anatomic diagram, showing the nearly vertical position of the stomach with the pylorus in the middle line of the body, and but little elevated above the lowest point of the gastric cavity. It is turned upward and to the right just enough to prevent the weight of the gastric contents bearing directly on the sphincter apparatus. The only portion of the duodenum in which we are interested is the four inches lying between the pylorus and the papilla of the common duct of the liver and pancreas. This may be called the vestibule of the small intestines. Its position subjects it internally to the perils of ulcer from the acid gastric juices, which its thin

tunics but inadequately resist. Externally its function is often interfered with by adhesions to the gall-bladder and bile tract, secondary to gall-stone disease. This unoffending bit of intestine is so often offended against as to cause it to become the most frequently diseased portion of bowel of the same length. The remaining eight inches of the duodenum is protected by the alkaline secretions of the pancreas and liver. Its fixed position and peculiar horseshoe shape, with its delivery point nearly as high as its origin, enable it to mechanically slow the

is of great interest. Like the appendix, an obsolete organ of storage function and limited outlet, it gives rise to a variety of troubles, which we are only of late beginning to appreciate. It is an old aphorism that "Nature finds mischief for idle hands to do." The gall-bladder has a capacity of about an ounce, and as we find almost universally in organs of storage function, the neck is raised slightly above the lowest point to prevent the weight of contents resting directly against the outlet. The little pouch thus formed may be called the pelvis of the gall-



ingested material during the mixing process for which its large caliber affords accommodation.

The anatomy of the bile tract is equally interesting, and especially the relations of the common liver duct to the pancreatic duct and the duodenum. There is continuity of mucous surface, each protecting itself from the secretions of the others by the mechanical washing effects of its own secretion, the joint discharge and a feeble sphincter apparatus preventing entrance of the duodenal contents.

The gall-bladder, as it furnished the initial lesion in more than one-half of the diseases of this group,

bladder (Brewer). It is here that the obstructing stone is so frequently lodged in cystic impactions. Murphy observes that the fundus of all organs has but few lymphatics, while the region of the neck has an abundant supply; hence, even with septic contents, there is but a mild reaction when the pelvis is obstructed, as compared with the startling temperature curves of duct stones.

The pancreas composed of two originally separated parts, has in nearly half of the specimens which have been examined two patent ducts, that of Wirsung, which is the important one, uniting with the

common liver duct. The minor duct of Santorini, however, has a possibility of useful function in certain diseased processes, as pointed out by Opie. The pancreas was originally an intraperitoneal organ, becoming retroperitoneal by a later evolution (Huntington), and in this anatomic peculiarity Brewer believes lies one of the reasons for the diffusion of fat necrosis resulting from acute pancreatitis. Mikulicz has called attention to the fact that adhesions to the pancreas in gastric cancer gave a mortality of 73 per cent. in his resection cases. Robson also notes the pancreatic mischief occasioned by perforating gastric ulcer on the posterior wall.

The blood supply of this group of organs is almost entirely from a single source in the celiac axis. It has been experimentally developed that the severance of all connctions of the pancreas excepting its blood supply, does not check secretion if food is placed in the gastrointestinal tract. In the nerve supply from the pneumogastrics and sympathetic ganglion, we find the same direct relationship involved. If we study the function we see the same association. The stomach can be compared to a mill, the fundus the hopper, in which the food is macerated in a weak solution of pepsin and hydrochloric acid, and the muscular pyloric portion the grindstones in which the masses are broken up into a homogeneous whole. The entrance of food into the duodenum causes the outflow of biliary and pancreatic secretions, the absorption returning to the liver by way of the portal vein. This is so elementary that you wonder that I should refer to it, yet the causation of the common surgical lesions lies in perversion of these fundamental functions, and is just as simple. Mechanical injury of the pyloric portion and excessive acidity of the gastric secretions, under anemic conditions, give rise to ulcer and lie behind the precancerous lesions which Ochsner notes is found in the history of cancer of the stomach in the majority of cases. The acidity of the gastric secretions renders the contents of the stomach, when turned into the intestine, relatively sterile, but increases the liability of ulcer of the duodenum. The sterility of the upper intestinal tract is still further increased by intestinal absorption, as shown by Adami, the bacteria being picked up and destroyed in part by the glands. Many germs are, however, carried to the liver, and here either annihilated or screened out of the blood in the portal vein and discharged with the bile. We must look on the bile as always containing a few bacteria, and it is probably this attenuated infection of bile retained in the gall-bladder which gives rise to gall-stone disease, which in turn is the chief factor in the production of duct inflammation of both the liver and pancreas.

These considerations, so briefly outlined, taken in conjunction with the embryologic origin, justify the grouping of the surgical lesions of the upper digestive tract, and at once enable the diagnostician to associate the symptoms and the surgeon to direct his attention, not to one, but to the entire group of organs. The burden of proof lies with the practitioner, not only to demonstrate that the disease rests in one organ, but to differentiate and show that no other is involved.

The art of the diagnostician lies in the proper valuation of the signs and symptoms of disease in organs of associated function and pathology. The instinct which seems to lead some men to a correct conclusion, and by a mental process they could not themselves analyze, usually depends on few things, the immaterial or inconclusive evidence being un-

consciously discarded. For instance, note the value of the colic in the diagnosis of gall-stones. The typical attack comes on and stops abruptly, is relieved by vomiting or a feeling of movement of gas, is irregular in time, in regard to food, and not accompanied by temperature or pulse elevation, and leaves the patient able to attend her duties almost immediately after cessation of pain. While the pain lasts, it is excruciating, felt in its greatest intensity in the epigastrium, radiating upward behind the sternum and into the back. The distress penetrates to the right side, but occasionally to the left, and lasts from a few minutes to six or eight hours. When the patient comes to the physician it may have been years since the typical attacks; he may have forgotten them, the present trouble complained of being pain, digestive disturbance, and tenderness on deep pressure over the gall-bladder region. The history of the early attack is worth more than the physical examination in many cases. Compare it with the pain in gastric or duodenal ulcer, which may be just as severe, but lasts a day or two longer, especially when due to regional peritonitis, and is accompanied by gastric symptoms and local tenderness. The patient diets, which means he reduces his food supply. The symptoms last more or less for some days or weeks, and the interval of apparent cure gives some weeks or months of comparative health.

Acute perforations of the organs of this group are relatively common and give rise to symptoms which would be at once recognized if they occurred in the region of the appendix, but occurring in the upper abdomen too often go to a fatal issue unoperated. The initial symptoms are remarkably alike, whether of the gall-bladder, the duodenum, stomach or acute perforation of the pancreas with fat necrosis. The onset is essentially the same in each. Sudden extreme epigastric pain, with collapse, ushers in the attack, and muscular rigidity, as a rule, comes on early. The diagnosis of perforation, if we are on our guard, is easy, although it may be difficult to say which organ is affected; but this does not make any difference. The vital consideration is that it has happened, and immediate operation must be performed.

In 811 operations on the gall-bladder and bile tract we had 4 acute perforations of the gall-bladder, with but one recovery, although the average mortality in the benign series was but 4.47 per cent. In 45 operations for duodenal ulcer, 4 acute perforations occurred, with 2 recoveries, while in the 41 operations for subacute and chronic ulcer there was only one death. In 469 operations on the stomach, 5 perforations occurred, with 2 deaths. In 32 operations for diseases of the pancreas, there was only one operation for acute pancreatitis and fat necrosis, with recovery. This gives 14 cases of acute perforation, with a mortality of 50 per cent., and why? Because the operation was usually too late. The death rate in over 1,150 operations for subacute and chronic benign conditions of this group of organs averaged a little less than 5 per cent., counting as a death from operation any patient dying in the hospital without regard to cause or time elapsed between the operation and the fatal issue. If we add to this mortality of 50 per cent. in operations for acute perforation, the cases seen in a moribund condition beyond even attempt at relief, and the still larger number in which death occurs without an ante-mortem diagnosis, we get some idea of the appalling nature of the disaster. To be successful, operation must be immediate; the condition is as

imperative as hemorrhage from an artery of the third class. Few recover operated on later than ten hours after perforation. The conditions simulating perforation in the upper abdomen, such as thrombosis of the mesenteric or splenic vessels, diaphragmatic and duodenal hernia with strangulation, and so forth, are rare, and likewise call for early operation.

As a rule the history and location of the early acute pain will furnish evidence as to the origin of the trouble. Preceding perforation of the gall-bladder there are often symptoms of several days' duration with a history of gall-stones. The acute pain occurs in the gall-bladder region. Early drainage with removal of the gall-bladder should give a mortality of not to exceed 10 per cent.

Duodenal perforation usually occurs in cases of chronic ulcer with years of symptoms preceding; but the immediate onset is exceedingly acute, and not ushered in by a few days or hours of prodromata, as is often the case with the gall-bladder. The location of the early pain is just to the right of the median line. The liquids gravitate at once to the appendiceal region and simulate perforated appendix. The rapid diffusion of escaping contents is fatal to delay. Operation for acute perforation of the duodenum is rarely successful after eight hours. Suture of the perforation with suprapubic pelvic drainage, and after-treatment in the sitting posture (exaggerated Fowler's) in early cases should give 80 per cent. or more of recoveries.

Gastric perforations occur on the anterior wall, according to Brunner, 7 times to 1 posterior, and near the cardiac end 5 times to 3 times in the pyloric portion, and near the lesser curvature 122 times to 16 times near the greater curvature. The initial pain is usually to the left of the median line, and early diffusion of fluids is to be expected. Only 10 per cent. occur without previous symptoms of chronic ulcer. The results of operation being in direct ratio to the amount of gastric contents, and the length of time which has elapsed, the treatment is similar to the duodenal ulcer.

The term perforation of the pancreas from inflammation with resulting fat necrosis is a purely pictorial expression, and not a pathologic entity in the sense the word is used in the preceding remarks, yet it conveys the ideal and calls attention to the value of peritoneal drainage in its treatment, as shown by Woolsey. The symptoms are sudden pain in the epigastrium, collapse and early extreme distention of the abdomen. On opening the peritoneal cavity, free fluid often of a hemorrhagic character is evacuated. The little fatty masses in every direction and the enlarged pancreas call attention to the source of the trouble. This particular phase of acute pancreatitis cannot be separated from the hemorrhagic type in which treatment is as yet in an unsettled state. Those interested in this question will find a mine of information in the Hunterian lectures for 1904 by Mayo Robson.

The group of acute perforations gives an unsatisfactory mortality, with a prolonged period of disability from drainage, and without a certainty of permanent cure of previous underlying conditions. This will not long continue. Like acute gangrenous appendicitis, the condition will be recognized early with corresponding improvement in results.

The diagnosis of the chronic infective lesions of the organs of this group is in a far more satisfactory condition. The general mortality of gall-stone operations is not above 5 per cent., taking the cases as they come, but even this is too high. Grouping

the cases in which the entire process is limited to the gall-bladder, the mortality is from 1 to 2 per cent., and depends to a large extent on the general condition of the patient. Secondary complications, chiefly those which involve the hepatic and common ducts with resultant cholangitis, pancreatitis, and so forth, are responsible for the death rate. As practically all of the patients have symptoms on which a diagnosis could be based previous to the complications, it will not be long before early operation in patients otherwise in good health will be the rule as it is now in chronic and relapsing appendicitis. Not only is the mortality thereby reduced, but the disability is likewise lessened. The average stay in the hospital for uncomplicated gall-stone patients is slightly less than seventeen days; the convalescence of the complicated duct cases is prolonged one or two weeks.

Chronic infections of the pancreas are usually secondary to gall-stone disease, and, as a rule, do not occur excepting where the common duct has been directly irritated by the presence of calculi, although the consequences may continue for some time after the passage of the offending body. The results of drainage of the gall-bladder and bile ducts are extremely satisfactory. In our series of 32 cases there were but 2 deaths; these patients had coincident suppurative cholangitis.

Chronic infective lesions of the stomach with ulcer as a type are becoming better understood every day, as surgical operation discloses the actual conditions present. The primary mortality of operations for their relief are in a fairly satisfactory condition, but as to ultimate results we can not say definitely. For the obstructive complications the result of ulcer, there can be no question as to the relief afforded and at a nominal risk. The dilated stomach with retention or stagnation of food suggests at once drainage operations with gastrojejunostomy as the type. We have patients of this description alive and well more than twelve years after operation.

Chronic ulcer without mechanical obstruction gives a less promising outlook. The very fact that there is normal gastric motility indicates that gastroenterostomy or other drainage operation is less necessary. Our results in operations for this description of lesion have not been wholly satisfactory, and furnish a considerable percentage of secondary operations and failures to relieve.

Cannon's experiments have shown the same results. A gastroenterostomy on a normal stomach of an animal does not drain the gastric cavity, even if placed at the lowest point. The gravity advantage of the gastroenterostomy is overcome by intra-abdominal tension, and the food, by muscular action, is carried out the pylorus rather than the artificial opening. The magnificent showing of gastroenterostomy in obstruction has led to the indiscriminate performance of the operation in those cases of ulcer in which gastric drainage is normal. This particular phase of the subject must be further investigated.

Chronic ulcer of the duodenum is relatively more common in the upper two inches than in any corresponding portion of the stomach. It is especially liable to perforate, although its sheltered situation usually leads to adhesive protection. Many pyloric ulcers will be found to have their origin on the duodenal side. Gastroenterostomy is the operation of choice as it diverts the irritating gastric juices and food products from the sensitive surface, thus promoting rapid healing. We have performed gastrojejunostomy 286 times for all purposes, with a mor-

talities of 5½ per cent. in the benign series. The recent improvements in the technic of gastroenterostomy has greatly reduced the mortality and largely eliminated the causes of failure to mechanically relieve the conditions. Moynihan well says that "the surgeon may not unreasonably expect that from being a last resource gastroenterostomy may be considered as a method of treatment worthy of consideration in a much earlier stage of chronic ulcer of the stomach." Excision of gastric and duodenal ulcers would seem to be a wise procedure, but is open to certain strong objections. In 20 per cent. of cases more than one ulcer is present, and one or more may be undetected or lie in an inaccessible situation. It leaves the ulcer tendency unrelieved and more ulcers may form. Rodman has suggested the removal of the pyloric or ulcer-bearing portion of the stomach with complete closure of both duodenal and stomach ends and independent gastrojejunostomy. We have followed this plan in 5 cases of inveterate ulcer relapsing after gastroenterostomy, with good results. The gastroduodenostomy of Finney is a most excellent operation, and we would predict a wider field of usefulness than it has enjoyed. We have performed this operation 46 times, with one death, and no relapse. The theoretical objection is that in open ulcer the food must pass the ulcerated area before reaching the widened pylorus, and obstruction has no part in the production of ulcer, as is shown by the development of duodenal ulcers. Pyloroplasty must be discarded. While we had no death in 20 operations, we had 7 relapses.

In briefly calling attention to the malignant diseases of this group of organs, the writer would emphasize the possibilities of cure by means of operation. In the gall-bladder we found 4 per cent. of cases at the operating table had malignant disease, and all of these cases had gall-stones present or evidence that they had been present at one time.

Since it has become the practice to remove all thick-walled gall-bladders as useless and a possible source of future trouble, many cases of malignant disease in an early stage have been in this way, as one might say, accidentally cured. We have met with several such instances.

Cancer of the stomach is the most common type of malignant disease in the human body, constituting one-fourth to one-third of the total number. The radical treatment of gastric carcinoma is now on assured ground, with a mortality of 10 per cent., or less in favorable cases, to 20 per cent. in late but still operable disease. The only necessary thing for success is an early diagnosis, and this must be on clinical grounds, supplemented by early exploratory incision. In 46 gastric resections for pyloric cancer we had 7 deaths.

The profession may well look on the surgical achievements in this new field of work with pardonable pride. That there are many shortcomings must be admitted, but in the history of surgery there has never been a territory opened up with equal rapidity, nor one in which the physician and surgeon have worked together in such harmony for the common good. The statistics on which this paper is based represent the operative experience of Dr. Charles H. Mayo and myself.

Tent for Consumptives.—The Central Church, of Chicago, has devoted the collection of one Sunday to the providing of one home tent for consumptives at Whitehead, Col.

PROGNOSIS: ITS THEORY AND PRACTICE.¹

BY GEORGE DOCK, M.D.,
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THE topic I have ventured to bring before you is "Prognosis: Its Theory and Practice." As a text, let me quote from the oldest work we have on this subject,² which, though old, still has the freshness and modernism that genius gives to human productions:

"It appears to me [said the Father of Medicine] a most excellent thing for the physician to cultivate prognosis; for by foreseeing and foretelling, in the presence of the sick, the present, the past and the future, and explaining the omissions which patients have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick; so that men will have confidence to entrust themselves to such a physician. And he will manage the cure best who has foreseen what is to happen from the present state of matters. For it is impossible to make all the sick well. This indeed would have been better than to be able to foretell what is going to happen; but since men die, some even before calling the physician, from the violence of the disease, and some die immediately after calling him, having lived perhaps only one day or a little longer, and before the physician could bring his art to counteract the disease; it therefore becomes necessary to know the nature of such affections, how far they are above the powers of the constitution. Thus a man will be the more esteemed to be a good physician, for he will be the better able to treat those aright who can be saved, from having long anticipated everything, and by seeing and announcing beforehand those who will live and those who will die, he will thus escape censure."

In this Hippocrates describes the essential importance of prognosis to the patient and the physician in relation to treatment. Besides this, prognosis is often important to relatives and dependents, not merely for reasons of sentiment, but in order to protect property and prevent unhappiness and destitution that would be as painful for the patient to contemplate as for the others to suffer. There is another aspect not present in the time of Hippocrates—giving the patient an opportunity to prepare himself for the anticipated life beyond the grave. In many cases, too, prognosis may have important bearings on political parties or for the commonwealth.

The patient very often ignores these needs. If he asks for anything, it is usually either the name of the disease or that of the medicine the physician intends to use. He really understands as little of the significance of the name as he does of the action of the drug, and is often more quickly satisfied in proportion as both answers are occult. What really should interest him is, as clearly as his mental development permits, some idea of the changes in his body, anatomic and functional, their present seriousness, the chances of death, or of complete or partial recovery, with, in the latter case, the probability of temporary or permanent disability, near or remote, in some organs or functions.

Within the last century prognosis has lost some of its relative importance. Unlike etiology, diagnosis, prophylaxis and treatment, it has no special literature, and is only occasionally the subject of addresses or essays. But much of the so-called prognosis of the earlier periods was really diagnosis, as in Hippocrates' vivid description of empyema, and his remarks in regard to other diseases of the respiratory organs. It also seems

¹ Abstract of Oration in Medicine at the Fifty-fifth Annual Session of the American Medical Association at Atlantic City, June 7 to 10, 1904.

² Courtesy of the Journal of the American Medical Association.

³ The Book of Prognostics; the genuine works of Hippocrates, Adams' translation, Vol. I.

a mistake to assume that practical prognosis was more accurate at any period than in later ages of equal enlightenment. While we may admit that great masters, like Hippocrates himself, Galen, Sydenham and Boerhaave, were remarkably accurate in their prognostications, there is no reason for thinking that the rank and file, following their rules without having their keenness of observation and precision of reasoning, were more accurate, or as accurate as physicians of a later period when the formal study of prognosis was neglected, but when other means of knowledge were greater than before. We must bear in mind a fundamental difference in methods. The older prognosis was based on the observation of symptoms alone, and consciously or unconsciously took the standpoint of humoral pathology or some equally imperfect theory. One charge against ancient prognosis is not as serious as some have thought, viz., that the prognosis was made without a definite diagnosis. Even now we sometimes have to be satisfied with a very imperfect diagnosis, and yet may make a very good prognosis, at least for the immediate future. But the older prognosis was almost wholly lacking in anatomic, and totally without chemical basis. Realizing how far short of accuracy the diagnosis must have been in many cases, we can understand that prognosis must have failed almost as often. Moreover, in early medicine, most attention was paid to acute diseases, or the acute terminations of chronic diseases, so that the many important chronic diseases that now make so much of medical practice were comparatively neglected.

Whatever shortcomings medicine may have—and those who cultivate the subject most thoroughly feel them most deeply—it must be admitted that diagnosis is much more certain than ever before. Not only are we able to distinguish more quickly and more accurately many diseases long known, such as some of the acute fevers, malarial disease, tuberculosis, diphtheria and pneumonia; but we have learned the existence and the means of detecting many diseases formerly confused with others. As examples, let me name only a few, such as the diseases originating in the vermiform appendix and the gall-bladder, diseases of the pancreas, many diseases of the blood, a large number of diseases of the nervous system and of the ductless glands, and many diseases caused by animal parasites, of which the sleeping sickness is the most striking example at present.

The older prognosis, far from being negligible, is really of fundamental importance. It gives the accumulated experience of ages that, untrammelled by detail, carefully noted broad and elementary features of disease. As gathered together in the aphorisms and prognostics of Hippocrates, and in the numerous commentaries on them—not always improving the original—it furnishes a fund of inestimable value, but like everything else in medical art, this knowledge is less useful when applied mechanically than when worked over in the crucible of personal experience, tested by other methods and transposed into current formulae.

Older prognosis was possible to collect into fairly circumscribed space, but this is no longer true. In proportion as diagnosis has become subdivided, specialized and enlarged, and as knowledge of morbid processes has become more complex, so prognosis has become more intricate. Older prognosis was based on broad symptomatic lines, qualified in practice, we may be sure, by a consideration of the patient's constitution. The present basis is diagnosis, but of a different kind. It means not merely a recognition of the name of the disease, but a knowledge of the nature of the disease, still incomplete, but rapidly gaining in fullness and accuracy. In many cases we know the causes, and a good deal of the nature of the causes; in many more we know the

seats of the disease, and the anatomic, chemical and functional changes that result directly and indirectly. It is by the study of the altered functions that we can make a prognosis and plan useful treatment without knowing the name of the disease. Clinical and anatomical investigations have been aided by experiments and observations on lower animals, without which our knowledge would have been much less certain than it is. Scores of technical methods have been devised for reactions and explorations; natural forces previously unknown, such as the X-rays, have quickly been pressed into service. Long and painstaking observations have thrown much light on complications and sequels, their nature and detection. From all these things the prognosis proceeds naturally in most cases, but here again an indispensable part is a just recognition of the patient's constitution. It is probably true that in this connection we unduly neglect some prognostic aids furnished by the patient, such as changes of the physiognomy. But, on the other hand, we have much more accurate methods of ascertaining the constitutional factor than were formerly available. Constitution is still a somewhat vague term, but we can speak of it here as the result of the functions of all the organs. While the method of representing these functions is still inadequate, we can safely assert that we have much more accurate means of determining the condition of the heart, arteries and veins, and the force of the circulation than we had before; we have gone considerably beyond the recognition of the apoplectic habit in foretelling the danger of vascular disease. We can usually estimate fairly well the efficiency of the blood-forming organs; we can determine with reasonable accuracy the capacity for work of the stomach and intestines, as well as a few details of nutrition and metabolism; we are rapidly getting beyond the limitations of Falstaff's water doctor in fixing the anatomic and functional ability of the kidneys, and we are working toward methods of testing the functions of liver, muscles and nerves. When we have all these factors thoroughly investigated it is probable there will be little need of the *vis medicatrix naturæ*, now an essential part of prognosis.

In the conclusion resulting from these things there is no room for a supposititious clairvoyance, an intangible gift of prophecy, a hypothetic intuition that trained intelligence can not equal or industry surpass. We have a positive knowledge, a prescience, a prognosis, corresponding in accuracy and usefulness to our diagnosis, and often in advance of our treatment.

In the foregoing I have spoken of the theory. In the practical use of prognosis the first to profit by that function is the physician. With an accurate prognosis, based on exact and thorough examinations, knowledge of the natural course of the disease and of the patient, the physician foresees the course of the malady and is prepared for changes, emergencies and complications. He is thus enabled not only to preserve his imperturbability, so essential in carrying out necessary measures of treatment, but he can also prepare the patient to meet coming events in better physical and mental condition than otherwise, and, what is often of even greater importance, the self-confidence thus shown stimulates the efforts and the compliance of others concerned in the case.

Physicians, like other people, can often be classified as either optimists or pessimists. Not that these tendencies affect all parts of the individual's activities. One may be a perfect Pangloss in sociologic, political or climatic matters, and yet take a gloomy view of all his patients. (I am not speaking of those who, rarer in the profession than in some of its parasitic growths, habitually exaggerate the danger of their cases, making every angina a diphtheria, every erythema an erysipelas and

every bronchitis a threatened pneumonia.) Another who is perpetually cast down by the failure of democratic government or the need of a stronger one, the immorality of the rich and the rule of the bosses, may meet every case with hope and cheer.

But the practice of prognosis should be cultivated as objectively as any other part of medicine. Not only the therapeutic indications suggested by it, but also the human ones, should be carried out without fear or timidity, without unnecessary harshness, but also without the false benevolence that often does more harm than brutal frankness or ignorance. Here, as in other departments of medicine, the welfare of the patient must be the touchstone by which the action proposed should be proved.

No disease should be looked on as insignificant. Nothing seems less becoming than to hear medical men speaking lightly of disease in general, or of any disease in particular. It is no consolation to the mother whose child has died of one of the rare complications of chicken-pox to find that many physicians think that too trivial to concern themselves with it. Nor does it increase confidence in the profession to have hysteria and neurasthenia considered imaginary and ridiculous evidences of perversity, while the impatience, not to say lack of scientific interest sometimes shown toward other less well-defined neuroses, undoubtedly has some relation with the crowded ranks of followers of isms of all kinds.

In acute diseases the best general rule is still that of Hippocrates (Prognostics; 19, Sect. II): "In acute disease it is not quite safe to prognosticate either death or recovery." A case of this kind, however, should not be considered likely to die unless from a complication, or from the effect of a pre-existing disease, though in certain diseases, such as scarlet fever and diphtheria, the danger of a sudden change and of death should be made known in the beginning. Of course, in cholera and plague, and even in cholera infantum, such information is rarely necessary. In some other acute diseases the study of prognosis prepares the physician not to be unduly elated by the remissions that are so reassuring to relatives. The temporary amelioration in meningitis and peritonitis, in which the patient seems almost free from symptoms, may be mentioned. Less disappointing, but still ominous, is the occasional lull in bronchopneumonia. But in the cases I have just mentioned it is rarely advisable to bring the unfavorable probabilities too strongly before the patient. In these we often need the effects of reassurance and of hope. For the latter as we see it in medical practice is not merely the "kind nurse of old age—hope—which," as Pindar says, "more than aught else steers the capricious will of mortal man," in acute cases especially it is distinctly stimulating to physical and mental processes. Sir Dyce Duckworth, speaking from a ripe experience, recently gave an address on "Hopefulness in Medicine," in which he emphasized this fact, and Niemeyer, equally successful in his career, at his medical promotion defended among others the thesis *medicus semper hilaris*. On the other hand, it is a serious error not to point out, after recovery from certain acute diseases, the possibility of sequels, sometimes months or years afterward, and the advantage of examinations at intervals for the purpose of detecting them before they become inveterate. The thorough examination of the urine at intervals after scarlet fever, of the lungs after pleurisy and all bronchitic diseases, of the heart and arteries after many infectious diseases, often has great practical value.

In chronic diseases there are few exceptions to the rule that the patient should be told the nature of his case as fully as possible. At least, in patients who can

be made to understand, and who have a possibility of recovery, of definite improvement or of long duration, there are only individual exceptions. Patients with tuberculosis, heart disease, kidney disease, and disease of the alimentary tract can not get the best possible results unless they understand why and how they should do certain things and why they should avoid others. Tact and patience and a knowledge of human nature are essential in this. The statements made should be as simple as possible, as brief as definiteness permits, without pathological explanations. Better no statement than an unconsidered or an unintelligible one.

In talks of this kind we too often forget how different are the ideas of non-medical persons, even those who have studied physiology in the public schools, from our own, regarding the body, its functions and diseases. I am always interested in seeing how soon medical students lose the lay point of view, just as one forgets an unused foreign language, and how sometimes they never recover it. Yet unless they do, they lack valuable means of giving aid. Darwin has noticed how everyone who studies profoundly a subject often becomes unaware on what points the ignorant require information. Carlyle, as John Beattie Crozier tells us, imagined his stomach as some old teakettle, thickly encrusted with fur, and I have seen an otherwise intelligent man on the point of using strong sulphuric acid for a cough, because he found by experiment that oil of vitrol dissolved sputum more quickly than any other reagent he had tried. Nor is it enough to make the explanation. We must ascertain whether the statements are understood, and, if possible, whether they are accepted. How often, even with an intelligent individual, after we have stated the existence of a small tuberculous focus, and described the results of rational treatment, we find the patient shutting himself in a dark and close room, taking "lung cures," cough syrups and more or less medicated cod-liver oil, and how often, after demonstrating the sufficiency of dietetic treatment in a digestive disease, we find the patient taking bitters, digestive ferments, usually well neutralized by alcohol, antiseptics and other drugs less easy to classify. So time and patience must be devoted to this part of the work, and we should never be discouraged by failure. I am convinced that there is an improvement in the possibility of carrying out rational treatment, notwithstanding the insidious propaganda of useless or dangerous methods in and out of medical journals.

It is much easier to advise in cases that have a strong tendency to recovery than in those that have not, and there is room for difference of opinion and of practice in the latter, because the conditions vary with patients according to individuality and accidental factors. A number of aspects present themselves for consideration. In the first place, there is often an element of diagnostic or prognostic uncertainty, where the prospects are better than they seem. Sir Dyce Duckworth¹ has formulated universal experience in pointing out the advantages of the "cautious 'if,'" and if the alternative accepted is the hopeful one, much good can be accomplished in many cases. An interesting example is given by Kussmaul in his fascinating "Jugenderinnerungen." Having made a reputation as a zealous dissector, and having won over his confiding peasants to the many advantages of post-mortem examinations, he was asked by the father of a girl with advanced tuberculosis of the peritoneum to arrange for an autopsy on the daughter, when she died. Although Kussmaul, too, thought the daughter was lost, he retorted that he could not speak of an autopsy until the patient was dead. Notwith-

¹ Duckworth, Sir Dyce: Address on Medicine, British Medical Journal, 1896, II, p. 251.

standing many obstacles, the girl recovered. The tendency to take the less hopeful alternative is still shown in some cases of tuberculous disease in stages not far advanced, though it is not so common, fortunately, as it was not many years ago, to see such patients given over either to a life of dissipation or of abject despair. The prognosis of valvular disease of the heart is also in a much more optimistic vein than it was fifty or even twenty-five years ago. However, in many cases the prognosis needs to be tested by a therapeutic "if" that is not as well recognized as it deserves. The physical conditions may seem hopeless, and yet if the action of the heart can be improved the case may assume a very different aspect. The advantages of trying were well illustrated by a case in which a woman with aortic and mitral insufficiency and moderately severe loss of compensation was given up as beyond treatment by her family physician. Not knowing this I told the relatives the impossibility of complete recovery, the danger of sudden death or more probably rapid failure at any time, but also the possibility of improvement and a fairly comfortable life for some time, all the more worthy trying to realize, because the condition was not complicated by medicinal action, and the other important organs showed no serious alteration. The family physician then wrote me admitting that he had stated improvement was out of the question, and treatment not worth trying, although under subsequent treatment the patient lived two years and nine months.

In cases hopeless in a more certain degree than such as I have just mentioned, it too often happens that treatment is abandoned too early in the case. Patients with cancer of the stomach or other inoperable tumors, cirrhosis of the liver, and many other diseases are permitted to drag out their existence without relief.

There are several reasons for this. Sometimes families having been told the truth about such a patient, refuse all further medical aid, even when the conscientious physician who gives the information points out what can still be done.

Many physicians voluntarily discontinue attendance when they realize that the end is inevitable, with the feeling, doubtless, expressed by Sir William Temple. The latter said that "an honest physician is excused for leaving his patient when he finds the disease growing desperate, and can, by his attendance, expect only to receive his fees, without any hopes or appearance of deserving them." This, however, ignores the fact that in such cases the accomplished physician can often do more real good to the patient than in many cases that recover, while the opportunities for obviating despair, alleviating pain and soothing mental anguish, and for exhibiting thoughtfulness, gentleness, persistence and variety of resources, are more valuable to the physician than any fee. Even in acute cases it sometimes happens that the physician is either discharged or withdraws because the indications seem hopeless, and I have known of patients with pneumonia living for one or two days in this way, the family waiting for the end of a life that with greater effort might have been saved. Sir Francis Bacon described this tendency as one of the deficiencies of medicine, "so that Sylla and the triumvirs never proscribed so many men to die as physicians do." For, as he continued, "the office of a physician is not only to restore health, but to mitigate pain, and not only when such mitigation may conduce to recovery, but when it may serve to make a fair and easy passage."

Improvement in methods of treatment have an important relation to prognosis, in that many diseases considered hopeless at one stage of knowledge, may in another offer many chances for recovery or alleviation. In this connection a critical knowledge of current med-

ical literature is necessary, and a realization of the value of medical evidence. Few things can be more disastrous to the physician's mental development—never completed—than constant change of therapeutic method, but there are differences. One need not try every drug proposed for the treatment of typhoid fever or pneumonia, nor every new antipyretic or hypnotic. But the physician who does not inform himself quickly of the value of surgical treatment in various disease as it is developed, in pelvic diseases, brain diseases, diseases of the appendix, biliary tract, stomach and pancreas, comes very near deserving the reputation of an unscrupulous practitioner. In these departments, too, mistakes are made and exaggerations are inevitable concomitants of progress, but the gain is often distinct and unmistakable, and often changes the prognosis from one extreme to the other.

The rule in regard to giving the patient a good prognosis and the relatives a bad one, can often be followed, but is a very fallacious one on the whole. It is often more necessary to keep up the spirits of the relatives, especially those who have to nurse, than those of the patient, so that sometimes the rule can be reversed with advantage. Darwin cites some interesting and instructive examples of this kind, from his father's practice, and Billoth has expressed himself with much feeling in one of his letters. Moreover, the relatives informed, either from a feeling of compassion or otherwise, may not bring the patient to act on the information, and I have known of serious financial loss befalling a family because the relative entrusted with the task of breaking the news to the patient did not do this. Another risk is that the relatives may divulge the fatal prognosis in such a way as to put the physician in the light of a heartless deceiver, and thereby cause the patient to lose all confidence in him. On the whole, in cases where the patient should know the truth the physician is often the best one to state it, and he should see that this is done before it is too late.

Exceptions to the rule of candor may occur in the case of children, in women with no spiritual obligations or business responsibility, or in exceptional cases in men. No general rule can be laid down, but that such exceptions occur can be confirmed probably by every physician.

Of course, this part of the subject is closely related to the theory of ethics, and many writers on this subject have touched directly on the question of medical veracity with, as one might anticipate, diametric differences of opinion. Some moralists of the strict school of Kant and Fichte insist that any deviation from the absolute truth is wrong in medicine, as they assert that it would be wrong even for the purpose of saving the whole race. Others believe with Paulssen, who says: "There is not a physician in the world who does not give deceptive answers to his patients, who does not excite hopes that he does not share. He does not blame himself, nor do others, for everyone does the same." Johnson, "the stern old moralist," in his remarks on the subject, laid open a serious flaw in his own logic: "You have no business with consequences, you are to tell the truth." But surely the physician's chief interest is with the consequences, and if he thinks the patient can gain only by misrepresentation, it is just as proper for him to use it as it would be to give a medicine that in other cases might be quite improper. But the physician in such a dilemma would do well to bear in mind the next sentence in Johnson's *ipse dixit*: "You are not sure what effect your telling him that he is in danger may have. It may bring his distemper to a crisis, and that may cure him." Jonathan Dymond, as strict as any one in his morality, threw a gleam of stern humor into the

discussion: "Persons frequently employ falsehoods to the sick man who cannot recover, lest it should discompose his mind. This is called kindness, though an earnest preparation for death may be at stake on their speaking the truth. There is a peculiar inconsistency sometimes exhibited on such occasions. The persons who will not discompose a sick man for his interest in futurity, will discompose him without scruple if he has not made his will."

This part of the discussion might be indefinitely prolonged, but I think we can never get far away from the principle. I intimated in the beginning—that in practical prognosis we must individualize, just as we have to in therapeutics, with the patient's welfare ever the object of our activity.

Accidents that follow an unfavorable prognosis occasionally suggest a revision of methods. I have already alluded to the error formerly not uncommon in the treatment of tuberculous patients. More acute results sometimes follow a fatal prognosis, as in two of my patients who resorted to suicide. One was a man with far-advanced carcinoma of the stomach, to whom I recommended palliative treatment and advised against a useless effort at radical treatment. The patient left for his home, but threw himself from a fast train and was killed. In another patient, a man with a large kidney tumor, apparently with many adhesions, my surgical colleague and I advised against an operation. The patient went to another hospital, and apparently received similar advice, for he shot himself through the tumor, and died in a short time. From a broad biologic standpoint it does not, of course, make any difference whether an individual organism dies as either one of these, or as it would if left to its fate. But no matter how one may feel on the subject of suicide, I have always thought these men less fortunate than another patient with carcinoma of the stomach, also far advanced. To him, in advising against an operation, I added that if he could find a good surgeon who was willing to operate, he might submit. He underwent the operation at the hands of one of the most distinguished surgeons in the country, and died on the table. In such a case the result is often unfortunate, because it prevents operations on other and more promising cases, but for the man himself, fighting to the last, it seems to me one can have only respect.

This brings up a question on which a few words may be proper—the question of euthanasia. Every few months some one—usually not a physician—proposes that people with incurable diseases should be killed by some painless method. The plan offers so many opportunities for crime that it would be difficult to carry out, but aside from that it involves important principles. The difficulty of telling when the proper time had come would often be insuperable. Aside from examples of fortitude and other virtues exhibited by the dying, how much the world would have lost if a chronic invalid like Stevenson had the cord of his life snapped at one of the times when the *aes triplex* of his soul seemed battered through! To take a less selfish view, we can think of the "picture of human patience, the visions of ripened character, which have been revelations and inspirations to generations of mankind" (Phillips Brooks), and see these repeated daily in sick rooms of all degrees, while the self-sacrifice and kindness developed in others at such times cannot but be of untold benefit to the race. To most physicians the suggestion of any planned shortening of life must be abhorrent. For countless generations they have been doing their utmost to lengthen life and lessen disease. They have shown how to prevent the plagues that formerly made life almost as bad as a perpetual illness for the survivors, and

they have also shown how many deaths can still be prevented. On the other hand, they can, in most cases, so treat the dying man that the bitter anguish often associated with death is absent, that life is not only less painful, but actually longer, so that they will continue to follow the rule of the Father of Medicine, and "give no deadly medicine to any one, even if asked, nor suggest any such counsel."

PREVENTIVE MEDICINE: ITS ACHIEVEMENTS, SCOPE AND POSSIBILITIES.^{1,2}

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THE terms sanitary science, public or state medicine, and preventive medicine, have frequently been used as almost synonymous. The latter term, "preventive medicine," however, has sometimes been restricted in its application to the prevention of the infectious diseases. In the broad sense, preventive medicine comprises both general prophylaxis and individual prophylaxis, and applies to all forms of disease, not simply to the infectious diseases. Preventive medicine is an applied science, which deals with the preservation of the health both of the individual and of the community.

No subject more vitally concerns the welfare of a community than that pertaining to its healthfulness. How the inhabitants live and how and at what age they die, what is the extent and character of the morbidity occurring among them and what are its causes, are questions of momentous importance. They are essential features in the problem, whose solution will teach men how they may live longer, healthier, and therefore happier lives.

In rural districts the average healthfulness of the inhabitants depends largely on natural conditions, such as elevation, climate, soil, and, to a much less extent, on the artificial conditions produced by the handwork of man. In densely populated cities, on the contrary, the natural conditions become relatively unimportant features in determining the degree of healthfulness, so much do they become subordinated in many cases to the artificial conditions which have resulted from the lives, labor and occupations of the inhabitants. It may be said with certain limitations that the inhabitants of any city in the temperate zone now have it largely within their power to determine what degree of healthfulness their city shall have. A high morbidity and a high mortality in any urban population depend largely on some remediable features of an unsanitary character, such as the sewerage of the city, the occupations, habitations, food and water supplies, and the habits of the inhabitants—all factors which lie to a great extent within their control. Hence, when any city in modern times has a high annual death rate, for example, 30 to 35 per 1,000, as was formerly the case in New York, Liverpool and other cities, instead of a death rate of 17 to 18 or 19 per 1,000, as now exists in London, Berlin and New York, it is because conditions are permitted to exist partly from the neglect, indifference and ignorance of the people, and partly from the lack of proper facilities and necessary efficiency on the part of the authorities.

The expectation of life at birth in certain manufacturing cities of England has been but little more than

¹ Abstract of an Address on State Medicine at the Fifty-fifth Annual Session of the American Medical Association at Atlantic City, June 7 to 10, 1904.

² Courtesy of the Journal of the American Medical Association.

one-half that of the healthiest districts of England. Until recent years it was twenty-five or twenty-six years in Liverpool and Manchester, thirty-seven years in London and forty-six years in Surrey, a healthy country district. Even at the age of thirty years, the expectation of life was seven years more for England as a whole than it was for the inhabitants of Manchester. I have estimated that the expectation of life at birth in New York City in 1866 was only a little more than twenty-five years, while in 1903, calculated on the death rate for that year, it had almost doubled, and equaled about forty-two years. For the seven-year period ending in 1873 the death rate under five years in New York City was 123 per 1,000 of the population at these ages. For the year 1903 the death rate under five years was 56. On the present estimated population at these ages, this reduction equals a saving of more than 28,000 lives annually.

In the seventeenth and eighteenth centuries the average annual death rate throughout the civilized world was at least 50 per 1,000 of the population, and probably it was much more than this. From 1628 to 1635 in London, these years being free from pestilence, the average death rate was 50 per 1,000, and the absolute annual mortality for twenty-four years, from 1620 to 1643, was over 70 per 1,000. The death rate during 1902 in London was only 17 and a fraction per 1,000. The mean expectation of life in London for the decennial period, 1771-1780, as calculated by Price's table, was 19.6 years, the annual mortality being 51 or 52 per 1,000; while from 1831 to 1835, although an epidemic year is included, the death rate had decreased to about 32 per 1,000. In 1894 the mean expectation of life at birth for all England had more than doubled that of 1780 in London, so that it was nearly forty-one years, and for London alone it was thirty-seven years. From 1771 to 1780 in London not less than five in each thousand of the population died annually of smallpox; in 1810 this mortality had sunk to two per 1,000, and in 1835 to 0.8, and in recent years it has been an absolutely insignificant decimal. Fever as a cause of death declined in almost the same ratio, from 6.21 in the decennial period ending in 1780 to 2.64 in 1810, and 1.14 in 1835. In the sixteenth century fever, plague, cholera and dysentery destroyed annually 31 out of every thousand of the population of London, or nearly twice the total deaths occurring now from all causes. These diseases at the present time, as causes of death, do not equal in London 2 per 1,000 annually of the population.

In old New York City (comprising the boroughs of Manhattan and the Bronx), for the seven-year period ending in 1873, 616 out of every thousand children born died during the first five years of life. As computed by the death rate under five in 1903, 280 would have died during these same five years. This mortality, while still far too high, equals a reduction of nearly 60 per cent., and as calculated for the estimated population at these ages, means a saving of about 20,000 lives a year in these boroughs. The death rate in the period over five years of age has naturally shown a much smaller decrease, although it has fallen from 19 or 20; as it was in 1865 and 1866, at the time of the organization of the Department of Health of New York City as at present constituted, to about 14 for the year 1903, being a reduction of nearly one-third. This has been accomplished notwithstanding the fact that the old city has increased during this time from a population of about 750,000 to more than 2,200,000.

It does not seem necessary or desirable for our present purpose to consider in detail the causes of this decrease or the special diseases in which it has taken

place, but the facts suffice to indicate the great achievements of preventive medicine during the past four decades.

The scope of the sanitary measures in force with reference to the ordinary infectious diseases has in recent years been greatly broadened. More than ten years ago the Board of Health in New York assumed the position that all facilities and procedures looking to the prevention and cure of the infectious diseases should be afforded by the Department of Health. The establishment of the methods for bacteriological diagnosis and the facilities for the serum treatment had their origin there, and have since been widely followed.

General prophylaxis, or that portion of preventive medicine which should come directly under the supervision of the health authorities, has or should have, a broader scope than that indicated, and should include the supervision, not only of those diseases which have generally come within sanitary surveillance, but also all the infectious diseases which from their nature are to a greater or less extent preventable, in addition to all other forms of disease which are the result of unsanitary living, occupations, habitations or surroundings, including those diseases arising from manufacturing, mining, or other industries which, on account of their nature, are peculiarly or especially injurious to health. It should also include with greatly increased powers and breadth of jurisdiction, the surveillance of the water and food supplies and the sewage disposal.

There has long existed a belief in the medical profession, and to a considerable extent it has also been a part of the conception of the sanitary authorities of their functions, that the registration of a case of any kind of infectious disease involved some surveillance of such case by the authorities. The slightest consideration would at once show that with relation to many of the diseases mentioned no such surveillance could be of any real service, and it might be a source of annoyance to the sick person, the family and the attending physician. Much good, however, would result, in my opinion, by such a broadening of the scope of sanitary work, without causing annoyance or being detrimental to any one. I should like, however, to point out that more than a year ago the Board of Health of New York City in the revision of its sanitary code included a number of new sections in relation to the infectious diseases, covering to a large extent the diseases above mentioned. These sections, with the accompanying notes, read as follows:

INFECTIOUS DISEASES.

SEC. 133. It shall be the duty of every physician to report to the Department of Health, in writing, the full name, age and address of every person suffering from any one of the infectious diseases included in the list appended, with the name of the disease, within twenty-four hours of the time when the case is first seen:

A. *Contagious* (very readily communicable): Measles, rubella (Rötheln), scarlet fever, variola (smallpox), varicella (chicken-pox), typhus fever, relapsing fever.

B. *Communicable*: Diphtheria (croup), typhoid fever, Asiatic cholera, tuberculosis (of any organ), plague, tetanus, anthrax, glanders, epidemic cerebrospinal meningitis, leprosy, infectious diseases of the eye (trachoma, suppurative conjunctivitis), puerperal septicemia, erysipelas, whooping cough.

C. *Indirectly Communicable* (through an intermediary host): Yellow fever, malarial fever.

SEC. 134. It shall be the duty of the commissioners or managers, or the principal, superintendent or physician, of each and every public institution or dispensary in this city, to report to the Department of Health, in

writing, the full name, age and address of any person suffering from any one of the infectious diseases included in the list appended, with the name of the disease, within twenty-four hours of the time when the case is first seen:

A. *Communicable*: Influenza, lobar pneumonia, bronchopneumonia, infectious diseases of the gastrointestinal canal (dysentery, cholera morbus, cholera infantum, summer diarrheas of infants).

B. *Parasitic Diseases of the Skin*: Scabies, *Tinea tonsurans*, impetigo (contagious), favus.

It will be noted, first, that two main groups of diseases are specified. In the first group, including the more readily communicable diseases, and some others which are not so regarded, registration is compulsory in all cases coming under the observation either of a private attending physician or an institution. These are separated for convenience under three heads: (a) The contagious or very readily communicable; (b) the communicable, including diphtheria, typhoid fever, Asiatic cholera, tuberculosis, and a number of others, and (c) the indirectly communicable, including only two diseases—yellow fever and malarial fever—which are transmitted solely through an intermediary host. In these three classes compulsory registration is required because in all of the diseases in these classes preventive measures, properly executed, are certainly efficient to a very large extent. As to the propriety of the compulsory registration of all of the diseases included under the first heading, "The contagious or very readily communicable diseases," I assume that there can be no reasonable difference of opinion. Measles, R  theln, scarlet fever, varicella, variola, typhus fever and relapsing fever, certainly without question, should be reported to the sanitary authorities. The necessity for reporting R  theln and varicella rests more in the danger of confusion of these diseases with measles and varioloid, respectively, than because of the importance of the diseases themselves. Our experience in New York has shown again and again that outbreaks of smallpox have resulted from the failure of inexperienced physicians to recognize mild cases, these having been mistaken for varicella and treated as such. Every case of varicella occurring in the city must, therefore, be reported, and all cases occurring in adults are immediately seen by a trained diagnostician. I say all cases of varicella in adults, because experience has shown that very frequently varicella in an adult is a mild case of variola.

In the second class, called simply "the communicable diseases," there might be some question as to the propriety of the reports in some instances. There would be none, however, with regard to diphtheria, typhoid fever, Asiatic cholera, plague, tetanus, anthrax, glanders and leprosy.

There can not now be, nor can I conceive that there ever will be again, any serious question as to the necessity or propriety for the registration and sanitary surveillance of tuberculosis, although this has been a subject of very bitter dispute and although this disease has come actually under the close supervision of the sanitary authorities in only three or four cities in the United States, and of practically none in Great Britain or on the Continent. Pulmonary tuberculosis was included in the list of communicable and reportable diseases by the New York City Board of Health ten years ago, and the measures adopted for its surveillance have been gradually extended and the lines for its restriction have been drawn closer and closer as each year has passed. Some doubt, however, might properly arise as to the necessity of the inclusion of other forms of tuberculosis than pulmonary tuberculosis in the registration returns, because

for the most part these other tubercular diseases are not communicable, or very slightly so.

The infectious diseases of the eye—trachoma and suppurative conjunctivitis—should be included because of the importance of the adoption of preventive measures in the public schools. Few persons had any conception of the great prevalence of these diseases of the eye in the public schools of New York until after the Department of Health adopted some comprehensive measures for their surveillance. Such a vast number of cases was found that the Board of Health was forced to establish special dispensaries and provide special hospital facilities for their care. Only within a few weeks a second hospital and dispensary has been opened, and in the original one in connection with Gouverneur Hospital an average of about 500 patients a day were treated during the year 1903, and nearly 5,000 cases were operated on for trachoma.

Puerperal septicemia should be included in the registration returns because modern aseptic midwifery has shown that in most instances this is a strictly preventable disease, and excepting rare cases of difficult or prolonged labor, its occurrence may be regarded as the result of uncleanness, negligence or incompetence.

No one, I fancy, would seriously question the propriety of including erysipelas and whooping cough in the registration returns. So far as this country is concerned I assume that typhus fever, Asiatic cholera, plague, leprosy and yellow fever are diseases which will never again call for anything more than occasional or emergency measures for the disposal of isolated cases or small groups of cases.

The registration of cases of malarial fever should be required, not because close surveillance of individual cases is necessary, but because the sanitary authorities should know where the sites of infection are, where the breeding places of the *Anopheles* mosquitoes are to be found, in order that they may adopt proper means for determining the cause of such areas of infection and the proper measures for their removal. In certain sections of New York City investigation has shown that in some instances almost every person living within certain small areas has suffered from malarial fever during the spring and summer months of a single season. Such outbreaks are without any question the result of local remediable unsanitary conditions, which furnish the breeding places for the mosquitoes. But without special information as to the existence of the cases, only to be obtained through the registration of malarial fever, knowledge of the presence of such unsanitary conditions and their removal, may become difficult or impossible. The surveillance in their homes of the individual cases reported is of course not contemplated. That conditions similar to those found in New York exist in other communities, I have no doubt.

Section 134 of the Sanitary Code of New York, covering the second group, deals with infectious diseases of a somewhat different type, and in these the Sanitary Code requires the reporting to the department by public institutions of all cases coming under their observation; but it only requests physicians to report them and does not require such reporting.

Class (a) in this group includes some of the more important acute infectious diseases of the upper respiratory tract, namely, influenza, lobar pneumonia and bronchopneumonia, and certain of the more common acute infectious diseases of the gastro-intestinal canal, namely, dysentery, cholera morbus, cholera infantum and the summer diarrheas of infants.

The acute diseases of the respiratory tract referred to should, in my opinion, be registered, because they are

infectious, because they are of prime importance as causes of death, and in order that general and special investigation may be instituted for the collection of data bearing on the modes of infection and the sources and causes of their prevalence and their distribution. New York City has during the last winter experienced the greatest prevalence of these diseases which it has had for many years. In the first four months of the year more than 6,000 deaths occurred from influenza, lobar pneumonia, bronchopneumonia and acute bronchitis.

Investigations in New York and other localities have shown that serious outbreaks of diarrhea and dysentery have occurred in various institutions and in local areas which were probably, if not certainly, preventable, but concerning which the sanitary authorities have had no information. It seems evident, therefore, that these diseases should be made notifiable.

Notification of the parasitic diseases of the skin should be required chiefly because of the liability to the extension of these diseases among children in the public schools.

There are certain very large and important questions of prophylaxis connected with the prevalence of typhoid fever and the milk and water supply of our large communities. The occurrence of great outbreaks of typhoid fever, such as the epidemics at Ithaca, N. Y., and Butler, Pa., during the last year, the prevalence in Philadelphia, Pittsburg and some other cities of the United States and the extensive distribution in the rural districts, constitute a disgrace to American preventive medicine and should arouse the sanitary authorities, the medical profession and the people to the provision of efficient measures and the enactment of suitable legislation for its prevention.

The annual cost of typhoid fever in sickness and death throughout the United States would be computed in terms of tens of millions of dollars. All of this loss we know is certainly preventable. If only a small portion of the annual outlay made by the country for sickness and death from this cause were expended in the education of the people as to the cause and the methods of prevention of this disease and the provision of proper water and sewerage systems, typhoid fever might soon become a rare affection. Unfortunately the city sanitary authorities are often almost powerless in this matter, as their jurisdiction does not extend over the watersheds which supply with water the people under their care, and a supervision by them of the sources of the milk supply is also frequently absolutely impossible.

In New York City detailed investigations of all the cases of typhoid fever occurring within the city limits were instituted several years ago and have been continuously carried on. These show that at least 25 per cent. of the cases occurring in the city have *certainly* received their infection outside of New York City, and a considerable percentage more have *probably* received it outside. Five or six per cent. are the result of contact with other cases, and the remainder are in all probability almost wholly the result of infection through milk or oysters.

A serious objection which may be urged against the adoption of the measures here recommended in regard to the registration of many infectious diseases is the increased labor thrown on physicians which their enforcement would involve. The question may properly be asked: Whether the sanitary authorities in the interest of the general public may call on the medical profession for the expenditure of so much time and labor without making any compensation in return. There are 35 diseases included in the New York list. The English authorities pay a fee for the notification of each case of infectious disease, and I believe that this course might

properly be pursued in this country; but this has not been the custom here, and the authorities generally are not now provided with the funds necessary for this purpose.

When the Department of Health of New York City established its bacteriological laboratories in 1892, measures were adopted to make some return to physicians for their interest and labor in connection with the sanitary surveillance of the infectious diseases. A systematic plan was then inaugurated, and has since been consistently followed, to secure their cooperation, by offering free bacteriological examination in the diagnosis and surveillance of various forms of infectious disease. This was first applied to Asiatic cholera in 1892, during the outbreak in New York harbor, and has since been extended to all of the diseases in which existing scientific knowledge made it possible, cerebrospinal meningitis being the latest disease added to this list. The establishment of this system of free bacteriological examinations in the diagnosis and surveillance of the infectious diseases, and the provision of facilities throughout the city for the collection of specimens and the sending of reports to physicians, constituted an entirely new departure in sanitary work and has been of the greatest value. The example of New York has been followed by the sanitary authorities in most of the large cities of this country, by many state authorities, and by authorities generally, in Great Britain and to a certain extent on the Continent. These examinations constitute the return which the authorities here have made to physicians for the reporting of cases and for their assistance and cooperation in their care. This return has a very considerable money value, when we remember that for such examinations the usual fee is \$5, and as physicians cannot, as a rule, make such examinations themselves, they must work without the assistance thus afforded, unless they appeal to the regularly constituted laboratories.

What now are the possibilities of preventive medicine as concerns the larger centers of population? In answering this question we may first take as the basis of our reply the conditions found in some of the large cities with the lowest death rates, or still better, the conditions found in some healthy rural districts. In considering the crude death rates, as ordinarily reported, however, one must not ignore the influence of the sex and age distribution of the population on the death rate. As is well known, the death rates in the period of life between five and forty-five years of age are very low, and the death rate among women is lower than among men. If, then, in a city there is a relative excess of the population in the middle periods of life, or an unusual preponderance of women, we may have a crude death rate which seems very low, but which when corrected may be relatively high. For example, the death rate of New York City, as corrected by the English life tables, would probably be at least three points higher than it is. For 1894 the gross rate was 22.76, and the rate corrected by the English tables was 26.46. The corrected death rate of some of the large, rapidly growing Western cities would probably be five or six points higher than the crude death rate reported. The death rate of London at present averages about 17 per 1,000, and when corrected about 18.5 per 1,000, while the Berlin death rate is somewhat lower than this. The crude death rate of Surrey, a healthy rural district in England, is 14 and a fraction, and when corrected would probably be 15.

We can hardly use for a basis of comparison the conditions in any of the cities of this country with very low rates, because the rates have not been corrected, and the basis on which they are calculated cannot always be accepted as correct. Taking all the facts together, and judging of the duration of human life as we know it, we

may accept a corrected death rate of 14 or 15 in a large city as a goal toward which preventive medicine should strive and hope to achieve. If we consider the question from another point of view, as to what is possible in the reduction of the death rate from distinctly preventable diseases, we would reach a conclusion not unlike the previous one.

In New York City it may be assumed that the present tuberculous death rate of 2.7 may, under proper surveillance, with certainty be reduced to 1.2, and 1.5 points would thus be subtracted from the crude rate. The diphtheria death rate, already reduced 65 per cent. by the use of antitoxic serum, should certainly be reduced to one-third of what it is at present; it is now about .6 per 1,000 population. Similar reductions should be possible in the death rate from typhoid fever, measles and scarlet fever. The diarrheal diseases of infants have already been reduced in the last twelve years to one-half of their former prevalence, and should still be reduced more than 50 per cent. Thus more than three points may be subtracted from the crude rate in New York, which in 1903 was 18.18. The rate would then be 15+. The rate for 1903 was the lowest in the history of the city.

The most fatal affections with which we have now to deal in New York are the acute respiratory diseases, including influenza, lobar pneumonia, bronchopneumonia and acute bronchitis. The average death from this group of diseases now exceeds three per 1,000 of the population, and in years when there is an epidemic prevalence of these diseases the death rate may be four or more, as seems likely to be the case this year.

The advances in preventive medicine have as yet not only had no influence in reducing the death rate from this group of diseases, but, on the contrary, there has been a slow and continuous increase. I cannot at this moment point out the method or the means by which a reduction is to be brought about, but still I firmly believe that with fuller knowledge such a reduction will become possible in the great cities where these diseases are so prevalent.

Something can be accomplished through the closer sanitary surveillance of the occupations and conditions under which the lower classes work, especially the noxious trades. Something, too, may be done through a closer supervision of foods to ensure their purity and freedom from adulteration.

A very difficult problem arises in connection with the diseases of the circulatory apparatus and the kidneys. My investigations have shown that in New York City a large increase has taken place, due to these causes, during the last twenty years. The acute respiratory diseases, cancer and diseases of the circulatory apparatus and the kidneys are the only important causes of death which have shown an increase during this period. The increase in cancer amounts to about 15 per cent., and the increase in the acute respiratory diseases amounts to about 15 per cent., while the increase in the diseases of the circulatory apparatus and kidneys combined equals about 40 per cent. In making this statement I have taken fully into consideration the possible influence of greater accuracy in the death returns, i.e., the inclusion formerly of these under other causes of death; but after making all allowances, it seems to me without question that an increase equaling 40 per cent. has taken place.

Yellow Fever in Mexico.—Meridia reports to the Superior Board of Health of Mexico five cases of yellow fever, and announces increased sanitary activity to prevent the spread of the disease. A yellow fever patient was found in the street in Tehuantepec and properly cared for.

ORIGINAL ARTICLE.

PATHOLOGY AND TREATMENT OF SIMPLE FRACTURE OF THE PATELLA.

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A LARGE amount of attention during the past ten or fifteen years has been devoted to the consideration of the clinical features of simple fracture of the patella. Prior to that time, and, consequently, before the introduction of aseptic methods, this lesion was usually treated conservatively, although in many instances the final result proved unsatisfactory, for not only was the range of movement in the affected knee-joint permanently restricted, but in addition its capacity to support the weight of the overlying body was greatly diminished. With the introduction of aseptic surgery, it was believed that much more satisfactory results could be obtained by the exposure and suture of the fragments, a procedure which afforded an excellent opportunity for acquiring a more accurate knowledge than had hitherto existed of the extent and nature of the damage to the bone and capsule. This procedure, in the early stages of its development was occasionally complicated by septic arthritis, and a stiff joint, or the loss of the affected extremity, or even of the life of the patient, was the unfortunate and distressing result.

With the perfection of aseptic technic, however, this risk of infection has been greatly diminished, although with justice it cannot be said to have been completely eliminated, but the disastrous results of infection are rarely seen. Notwithstanding this fact, however, the operation, although it has many enthusiastic adherents, still suffers the unmerited antagonism of the ultra-conservative. These condemn any radical procedure on account of the risk of infection, no matter how remote the possibility of that complication and continue to advise conservative treatment, while admitting that operative interference usually provides a much more satisfactory result in a shorter time.

The less satisfactory result in cases treated conservatively, namely that of a stronger or weaker fibrous union, is ascribed by different observers to the presence of one or more of the following conditions: The paucity of the blood-supply of the fragments, their separation resulting from the effusion in the joint and from the contraction of the quadriceps, their occasional tilting on either a vertical or horizontal axis or on both, the interposition of blood-clot or of torn portions of the capsule or periosteum, and the difficulty of retention after approximation has been satisfactorily accomplished. From the difficulty of ascertaining the exact nature of the cause which, if not remedied, contributes chiefly to the development of fibrous union, as well as from the difficulty of recognizing the presence of an actual rotation of the lower fragment so extreme as to place its fractured surface parallel

to the overlying skin, it is impossible for the surgeon to accurately foretell the character of the ultimate result in cases where conservative treatment is adopted. While, in some cases, the union is sufficiently strong to permit ultimately of a return to a laborious or athletic occupation, the weakness of the extremity in many others permanently precludes such a means of livelihood—certainly a serious out-look for a very large fraction of the community. On the other hand, in case of operation and in the absence of infection, every assurance of complete and prompt restoration of the strength of the knee can be given to the patient and an extremity can be promised which will be sufficiently strong to permit of the patient's engaging in any laboring occupation which he may select.

The fact that the most advantageous form of treatment still occupies debatable territory seems to warrant the report of cases in which the operation of suture has been performed, as well as a statement of the lessons which they may have taught:

Case I.—J. M., male, twenty-eight years old; admitted to the Presbyterian Hospital, January 13, 1901. Patient was kicked by a horse on the left knee. He fell to the ground and could not rise. On examination there are the signs of a transverse fracture of the patella at the junction of its lower and middle third, the fragments being separated about $1\frac{3}{4}$ of an inch. There was moderate distention of the joint. Operation one week later. Gas and ether; usual procedure. The line of fracture extended laterally through the external part of the capsule for a distance of an inch. Suture. The joint was closed without drainage.

Case II.—L. G., male, forty-five years old; admitted to the hospital January 21, 1902; patient slipped on the ice and fell. He was unable to rise or to extend the knee. Examination reveals a transverse fracture through the middle of the patella, the fragments being separated by a distance of an inch. There was great distention, the circumference of the affected joint exceeding that of the normal side by three inches. At the end of ten days through the application of ice, massage and elastic bandages, this had decreased two inches. Operation, gas and ether; usual incision and exposure. There was a bilateral rent in the capsule on either side of the line of fracture, more extensive on the right side. Suture with drainage for forty-eight hours through a counter-opening on the right side.

Case III.—W. J., male, thirty-five years old; admitted to the hospital June 18, 1902. Eleven years ago, patient fractured the right patella. Good fibrous union was secured and an excellent functional result obtained by immobilization with plaster and straps. To-day, while lifting a heavy case, patient felt the right knee give way and he fell to the ground. On examination there is a transverse fracture just below the middle of the patella, the fragments being one-half an inch apart. Moderate effusion. One week later,

operation; gas and ether. The capsule is torn on either side of the patella for a distance of about one inch. Closure without drainage.

Case IV.—C. O., male, forty-five years old; admitted to the Presbyterian Hospital November 3, 1902. To-day patient was thrown down, the right knee striking the sidewalk at a point just below the apex of the patella. There was loss of function. Examination shows a transverse fracture of the right patella at the junction of its upper three-fourths with its lower fourth. There is moderate effusion with a distance of three-quarters of an inch between the fragments. Operation four days later; gas and ether. The capsule was found torn for a distance of an inch from the inner extremity of the fracture. There was a rotation of the lower fragment on its horizontal axis through an arc of 90° , so that its fractured surface was parallel to the overlying skin. This malposition was corrected without difficulty.

Case V.—Male, fifty-five years old; admitted to the hospital January 12, 1903. One week ago, patient slipped and fell, sustaining a fracture of the right patella through indirect violence. On examination, there is a transverse fracture just below the center of the bone. There is moderate distention of the knee-joint. The fragments are about one-quarter of an inch apart. Operation two days after admission; gas and ether. On exposure the lower fragment is found to have become rotated on its horizontal axis through an arc of 90° , so that its fractured surface is directed toward the skin. On palpation, prior to the operation, the presence of this abnormal position was not suspected, the fractured surface not feeling unlike the normal anterior surface of the bone. At the time of operation this smooth feel of the fractured surface was found to be due to the obliteration of its irregularities by a thick layer of clotted blood. In this case the line of fracture was irregular and each fragment was still further bisected by a vertical fissure extending about midway between its lateral margins. No difficulty was experienced in restoring the position of the lower fragment and after suture the wound was closed without drainage.

Case VI.—P. T., male, thirty-eight years old; admitted to the Presbyterian Hospital January 25, 1903. During the past two weeks, the patient has received repeated trauma over the region of the right knee. There was no loss of function until one week ago when patient fell again. Examination reveals extensive swelling of the joint with a transverse fracture just below the center of the patella. There is a distance of about one-half an inch between the fragments. Operation five days later; gas and ether. The joint was found greatly distended with clotted blood. The upper fragment was bisected by a vertical fissure. The line of fracture was continuous with a bilateral rent in the capsule more extensive on the inner side. A counter opening was made on both sides for drainage.

Case VII.—P. B., male, forty-five years old;

admitted to the Presbyterian Hospital March 25, 1903. On day before admission patient fell down a flight of steps. There was immediate loss of function of the left leg. Examination revealed a greatly distended left knee and a transverse fracture of the patella at the junction of the upper and middle third. The fragments are about half an inch apart. Operation two days later; gas and ether. The joint was found to be greatly distended with blood clot. There was a small bilateral tear in the capsule opposite the line of fracture. An unusual amount of oozing seemed to warrant drainage, through a counter-opening on either side.

Case VIII.—J. H. S., male, twenty years old; admitted to the Presbyterian Hospital April 15, 1903. Six days ago, while attempting to reach some object on a high shelf by jumping, patient felt something give way in the right knee. There was immediate disability. On examination, there is moderate swelling both in the joint and the overlying soft parts. There is a transverse fracture at the junction of the lower and middle third of the patella separated by an interval of about one-half an inch. Operation two days after admission. A slight tear extending outward from the line of fracture was found in the capsule. A counter opening was made below and external for drainage.

Case IX.—C. B., male, thirty-five years old; admitted to the Gouverneur Hospital June 5, 1903. On day of admission patient fell from a truck, striking the left knee against the sidewalk. On attempting to arise, patient was unable to walk. Examination reveals a fracture at the junction of the middle and lower thirds of the left patella. There was moderate joint distention. Operation two days after admission; gas and ether. There was some inversion of the capsule between the fragments. Wound closed without drainage.

Case X.—L. G., male, thirty-nine years old; admitted to the Gouverneur Hospital May 15, 1903. On day of admission while attempting to push a hand-truck up an elevator shaft, patient lost his footing and slipped, feeling something give way in the right knee. On attempting to arise was unable to walk. On examination there is a fracture transverse at the junction of the lower and middle thirds of the right patella. There is moderate joint distention. The fragments are separated by three-quarters of an inch. Operation two days after admission; gas and ether. The capsule was torn especially on the inner side. Drainage through a counter opening on the inner side of the joint.

Case XI.—M. K., male, thirty-five years old; admitted to the Presbyterian Hospital November 30, 1903. This morning while going down stairs, the patient slipped, the right foot doubling beneath him. There was immediate loss of function and sharp pain in the vicinity of the left knee-joint. On examination there is moderate distention of the left knee-joint. There are the physical signs of a transverse fracture of the

patella at the junction of its middle and lower third. There is an interval of three-eighths of an inch between the fragments. Operation two days after admission; gas and ether. The fragments were exposed by the usual incision. The knee-joint and the contiguous soft parts contained a considerable amount of clotted blood. The inner portion of the capsule was torn for a distance of an inch extending laterally from the line of fracture. The fragments of the patella and the torn capsule were sutured with chromic gut. Closure without drainage.

Case XII.—J. J. M., male, eighteen years old; admitted to the Presbyterian Hospital, January 4, 1904. This afternoon while exercising in the gymnasium, patient fell from a horizontal bar striking heavily on the left knee. Immediate loss of function and patient was conscious of the fracture taking place. On examination there is a transverse fracture of the left patella, at the junction of its middle and lower third; there being an interval of an inch between the fragments. There is extreme distention of the knee-joint and considerable discoloration of the overlying skin. Local application of cold with a posterior splint for one week with only slight diminution in the degree of distention. Operation; gas and ether. Usual incision, with the opening of the joint; a large amount of clotted and fluid blood escaped in a jet. There was rotation of the lower fragment on a horizontal axis through an arc of 90 degrees, the fractured surface looking directly forward. There was a bilateral rent in the capsule, extending from either extremity of the line of fracture, more extensive on the left side. The abnormal position of the lower fragment was easily corrected, and after thorough irrigation of the joint, the fragments and the torn capsule were united with chromic gut sutures, a small rubber tissue drain being introduced through a counter opening just in front of the external lateral ligament. Usual dressing.

Case XIII.—J. F., male, twenty-three years old; admitted to the Presbyterian Hospital January 20, 1904. This afternoon, patient was kicked by a horse on the right knee, falling to the ground. On being assisted to his feet, patient found that walking was impossible. On examination the right patella was found to be transversely fractured just below its center. The fragments were separated three-quarters of an inch. There was considerable swelling of the joint and overlying soft parts. Operation two days later; gas and ether. Through the usual incision the fragments were exposed and the joint opened; considerable clotted blood escaping from the severed soft parts and the joint cavity. There was a rent in the capsule extending from the outer extremity of the line of fracture transversely for a distance of an inch. There was no rotation of either fragment. After irrigation, the fragments and torn capsule were sutured with chromic gut and the skin closed, without drainage.

Postoperative.—In every case, primary union was secured and there was complete restoration

of joint function, both in the arc of flexion and extension and in joint strength as a whole.

Pathological Features.—Although, in all the cases, here reported, the line of fracture has been essentially transverse, the point at which it has passed through the patella has varied materially, being usually nearer the lower extremity or apex than the upper part of the bone. This variation is probably explained by the fact that the line of fracture must represent the mean between the force of the contraction of the quadriceps muscle and the resistance of the ligament patellæ being influenced as well by the angle of flexion at the time the fracture occurred, factors which necessarily vary in different cases.

The transverse line of fracture is not infrequently supplemented by a vertical one bisecting one or both fragments, a condition frequently recognized only at the time of operation for the reason that the fragments so formed are usually held in close apposition by untorn periosteum. In cases of this character, the result of muscular contraction, the vertical line of fracture must be due to the sudden and forcible action of the lower portions of the vasti insertions in either lateral margin of the bone. If present, such a condition may easily diminish the strength of the ultimate union of the fragments.

In simple transverse fracture, the fragments are usually separated by an interval of from between one-half and three-quarters of an inch, the interval always filled in with coagulated blood, which is firmly adherent to the roughened fractured surfaces and is continuous with a similar clot permeating the overlying aponeurotic layers and partially or completely filling the articular cavity. In no case here reported has interposition of periosteum been observed; on the contrary, the periosteum has not even been detached from the fractured margins. Occasionally, however, a torn portion of the adjacent capsule has been observed to lie between the fragments.

In the majority of cases, there has been a more or less extensive tear of the capsule; occasionally unilateral, generally asymmetrically bilateral, it has always been directly continuous with the line of fracture, and has penetrated the synovial investment of the joint. This "fracture" of the capsular ligament presents, frequently ragged edges, which must be removed to secure proper apposition. Failure to observe this precaution may lead to ultimate weakness of extension. The degree of damage to the capsule can only be determined, and its proper repair accomplished through an exploratory incision.

In three cases (Nos. 4, 5, and 12) the lower fragment has been found rotated on its transverse axis through an arc of 90 degrees, so that its fractured surface was in apposition with the subcutaneous fat. One might very naturally infer that the diagnosis of this malposition could have been made prior to the exposure of the fragment through direct palpation of its roughened fractured surface; such recognition proved impossible, however, because in each instance its ir-

regularity was found to have been effaced by clotted blood. It is scarcely necessary to add that such a malposition, even if capable of recognition, could be corrected only through an open incision and that in the absence of such correction any conservative plan of treatment can only achieve failure.

Successful results obtained by conservative methods seem therefore to be a matter of good fortune, depending more upon the possibility of satisfactory approximation and retention of the fragments and upon the absence of tears in the capsule than upon the ability of the surgeon to recognize and rectify many of the conditions which interfere with proper union, and it is probably this very fact that accounts for the wide variability in the character of the result in cases which present similar physical signs and which are treated by the same conservative method; in those where satisfactory results are achieved, there has been no interposition of torn capsule, no tear or only very slight tears in the capsule and no rotation of the lower fragment, whereas poor results are the direct consequence of the persistence of one or more of these conditions. Nor is it possible to determine the presence of a rent in the capsule by the nature of the injury. To be sure, in fracture, the result of overmuscular action, the capsule is usually torn, while in those due to direct trauma, the damage inflicted may be limited to the bone. But both conditions are so frequently combined and the patient's statements so unreliable, because of the unexpectedness of the accident that accurate analysis of the cause may prove impossible.

The general plan of treatment which has been carried out in the cases here reported may be considered under three different heads:

1. Prior to operation.—The patient is kept quiet in bed and local applications of heat or cold made to the affected joint, which is placed on a posterior splint. These measures are continued until the local heat and tenderness subside and if possible, until some decrease in the degree of joint swelling has taken place. This usually requires from two to ten days, according to the extent of damage to the capsule and the amount of extravasated blood in and about the joint. If, at the end of that interval, there has been no decrease in the joint swelling, operation should no longer be delayed.

2. Operation.—The fragments of the patella and the torn capsule are most satisfactorily exposed by a curved incision joining with its convexity downward corresponding points between the patella and either tuberosity of the femur. The flap, thus formed, composed of skin and subcutaneous tissue is then reflected upward beyond the line of fracture.

After cessation of hemorrhage, all old extravasated blood is thoroughly removed; that beneath the skin and between the fascial layers preferably with a Volkmann spoon. The same instrument may be used for the removal of the blood between the fragments as well as for the

freshening of their surfaces. The clotted blood in the joint is most easily removed by irrigation and sponging. For this purpose a warm sterile salt solution or ordinary warm water that has been boiled proves least irritating to the synovial membrane.

The periosteum is then reflected backward a sufficient distance from the edge of either fragment to permit of the application of the drill which is passed obliquely so as to penetrate the fractured surface just in front of the posterior articular cartilage. Two such canals are made in corresponding parts of each fragment, heavy chromic catgut being used for the subsequent approximation.

The joint is once more thoroughly cleansed by irrigation, followed by the approximation of the fragments and the sutures of the tear in the capsule, the latter also with chromic gut. Throughout the entire procedure, the danger of infection is materially lessened if the removal of the blood, the irrigation and the subsequent sponging and drying are accomplished without the introduction of the finger of the operator or of any assistant into the joint cavity.

The question of drainage depends upon the amount of oozing that persists after the final irrigation. If this is slight no drainage is necessary; if excessive, a lateral opening is made on one side or both sides of the joint just anterior to the lateral ligament and a very small drain of rubber tissue inserted. This is invariably removed at the end of the forty-eighth hour and not replaced.

The deep fascia, the skin and subcutaneous tissue are now sutured with chromic gut. After the application of a sterile dressing, the limb is immobilized by a plaster splint reaching from the groin above to the malleoli below.

As a substitute for the drilling and suture of the fragments, the suture may be inserted through the overlying periosteum only. There is no question but that by this method, which requires less time, as accurate apposition of the bony fragments can be secured as by the suture of the fragments themselves, and also that, in the majority of cases no subsequent separation of the fragments occurs. The writer has always felt, however, that additional security is afforded by the suture of the bony fragments as well as of the overlying periosteum, and that in particular, the restoration of energetic active motion could be more quickly and safely accomplished.

Postoperative Course.—There is usually considerable pain, most severe directly after the operation and gradually diminishing until at from the fifth to the seventh day, it has completely disappeared. The temperature varies between 101° and 103° F., reaching normal about the tenth day. The degree of temperature as well as the length of its persistence, although in part due to the reparative process in the divided tissues, seems to depend chiefly upon the amount of extravasated blood. The writer has repeatedly observed as high a temperature as 103° F. in

cases of hemarthrosis of the knee without the presence of fracture or wound, the temperature decreasing as the blood was absorbed. The pulse rarely exceeds 100, ranging usually between 80 and 90. A return to the normal rate is more quickly reached than is the case with the temperature.

Postoperative Treatment.—At the end of forty-eight hours, the drain, if any has been inserted, is removed and not replaced, a fenestra being cut in the splint for that purpose. In the absence of a drain, a change of the dressing is necessary only to make the patient more comfortable, the more or less completely desiccated compresses being replaced at the end of the third or fourth day. At the end of the tenth day, the sutured patella is moved gently from side to side, to prevent the formation of adhesions between its articular cartilage and that of the trochlear of the femur. At the end of the third week, the splint is removed, and the quadriceps daily massaged. At the same time, a moderate amount of passive flexion of the knee is practised. At the end of the fourth week, active flexion is allowed and the patient begins to bear some weight on the affected extremity and to walk. At the end of the fifth week, the patient is encouraged to go up and down stairs and as soon as possible thereafter to return to his regular occupation. During this period, there has been a gradual improvement in the degree of active flexion of the knee, and at the end of two months the patient should be able to bend the knee, to at least a right angle. In from four to six months, normal flexion may persist. No atrophy of the quadriceps muscle has been observed.

In all cases of fracture of the patella in which this operation has been performed, there is a permanent increase in the size of the bone affecting chiefly its transverse, and to a less extent, its antero posterior and vertical diameters. Such an increase has not affected unfavorably the integrity of the femur-patella joint, the formation of possible adhesions being prevented in each case by early lateral passive movement of the sutured fragments, as described in the after-treatment.

A careful consideration of the cases here reported, seem to warrant the following conclusions:

1. That, owing to the not infrequent uncontrollable rotation of the lower fragment, through an arc of 90 degrees on its horizontal axis, accurate apposition of the fractured surfaces cannot always be secured and under these circumstances the ultimate result of conservative treatment could scarcely prove satisfactory.

2. That suitable apposition may also be prevented by the interposition of torn shreds of capsule, by extravasated blood clot and possibly also by the interposition of untorn periosteum, conditions which can be recognized and remedied only by exploration.

3. That suture of the fragments permits of simultaneous suture of the torn capsule, a pro-

cedure of the greatest importance for restoration of joint security.

4. That the results of suture are almost invariably excellent, and that the risk of operation is comparatively slight.

5. Finally, that in no way does the writer desire to belittle the risk of operation. On the contrary, the exercise of the most rigid aseptic precautions both in the preparations for and in the carrying out of the operation itself cannot be too greatly emphasized. Far better, in any instance, where for any reason, the highest degree of surgical asepsis cannot be practised, to advise some non-operative procedure than to subject the patient to the possibility of a septic arthritis with all its direful consequences.

MEDICAL PROGRESS.

NEUROLOGY AND PSYCHIATRY.

Alcohol a Cause of Locomotor Ataxia.—It is generally considered that syphilis is the main cause of tabes, yet tabes is a very rare disease among women, though syphilis is not uncommon. Erb's statistics gave 19 cases of tabes among women to 350 in men; Fournier found the proportion one to 26, while Mendel found it one to four. Fournier also found that 95 per cent. of tabetics were syphilitic, while Berger found only 20 per cent. and Remak 23 per cent. Yet syphilitic lesions, even those of the central nervous system, are comparatively easy to cure, while tabes is practically incurable. PARADOPOULOS (*Le Progrès Médical*, March 5, 1904) has practised twenty years in Asia Minor where syphilis among women as well as among men, are particularly common, and where, because of inefficient treatment at the outset, tertiary lesions are usual and of the marked type rarely seen in Europe. And yet locomotor ataxia is practically unknown among women, and exceedingly rare among men. There is a great difference in the social life of the Orient from that of Paris and London. Alcoholism is rare, everybody drinks water. Practically the only liquors to be had are wine, raki and brandy, and these are taken only on special occasions. Wine is prohibited by the Mohammedans, though raki and brandy are allowed, the Christians of Asia Minor are teetotalers, not even drinking wine, and among the Mussulmans alcoholic drinks are not used. So, it may be accepted that syphilis, even in its worst manifestations, is common in Asia Minor, while the taking of alcohol in large quantities is quite rare. At the same time locomotor ataxia is very rare. So it is difficult to believe that locomotor ataxia owes its origin to syphilis, while one may be readily led to believe that alcohol is an important factor in the production of tabes.

New Sign of Basilar Meningitis.—The early diagnosis of meningitis in children is often very difficult and usually only one or two of the many possible signs may be present. G. W. SQUIRES (*Med. Rec.*, March 26, 1904) has found that a sign, not heretofore described, has been invariably present in his cases, frequently as early as the fourth or fifth day. It is a rhythmical dilatation and contraction of the pupil and is elicited in the following way: The child's head is placed between the knees of the physician face upward with the body of the child supported on the bed or table. Gradual and forcible extension of the head upon the spinal column is then made. As the head is extended the pupils will be

seen to dilate and the more extreme the extension the more marked the dilatation. Upon flexion the pupils contract so that when the chin is forcibly brought to the manubrium the pupils are well closed up. This can be repeated several times during the minute and each time the pupillary phenomenon will appear.

Prognosis in Epilepsy.—Almost all sorts of indications have been sought for in efforts to determine some ground for prognosis in this disease. WILLIAM A. TURNER (*Lancet*, April 9, 1904) concludes from a study of 161 cases, that the mental features of the interparoxysmal state should be divided into four classes. The first contains those epileptics without any obvious mental impairment, the fourth, those having the highest grade of dementia. Sex has little influence upon the mental condition, but it may be stated in general terms that males are numerically more afflicted than females, 91 to 78 per cent., but that the highest degree of dementia is somewhat more common in women than in men. A family predisposition to epilepsy and insanity favors the supervention of a certain degree of mental impairment. The duration of the disease influences the mental condition to some extent. Mental activity and mental deficiency are, however, observed in cases in which the disease has lasted respectively for over twenty years and for less than five. The age at the onset of the convulsions has some influence upon the subsequent mental conditions, and the earlier the onset the less probable the persistence of a clear mind. The character of the attacks have an important relation to the mental condition, the profoundest degrees of dementia being most commonly seen when the major and minor attacks coexist. When grand mal occurs alone, mental health is as common as mental deficiency. There is a direct association between the frequency of the fits and the mental state. Fits recurring in series are accompanied by a high grade of dementia. The term "facies epileptica" is found more commonly in the higher grades of dementia, but it is occasionally observed in patients whose memory alone has been impaired. Of the 161 cases used in the preparation of this paper, the intellectually normal represented 13.6 per cent.; those with impaired memory, 31.6 per cent.; feeble minded, 25.4 per cent.; demented 29.1 per cent.

The Movements of the Superior Intercostals in Hemiplegics.—The symptomatology of the brain, particularly that which subserves localization outside of the motor areas is in an evolutionary stage. It is still quite unsatisfactory. The uncertainties of cortical and subcortical lesions are based upon a very crude physiology outside of a few simple principles. In this connection the clinical study of L. P. CLARK, on the movements of the superior intercostals muscles in hemiplegics is of interest (*Am. Jour. Med. Sciences*, December, 1903). The work consists of a review and confirmation of the observations of Hughlings Jackson, which were first published by him in 1895. This principle was to the effect that during quiet respiration in hemiplegics there is overaction of the superior intercostals on the paralyzed side, while during forced respiration the reverse results—the sound side overacts. In Jackson's original 28 cases he reported the presence of this symptom in 18. Clark has examined 161 cases and found it present in all lesions of the brain where the integrity of the capsular fibers was destroyed. In all the symptom was to be detected by inspection or palpation. The importance of such a symptom is obvious. The author unfortunately has not given a careful analysis of the cases, especially regarding the degree and extent of brain lesion. Granting the constancy of the symptom in destructive lesions of the capsule we have yet to determine the precise cortical elements which

are so grossly affected in the extensive capsular disease. From Clark's supposed pathology and the experimental work of Spencer, the cortical accelerator and arrest respiratory centers quoted by him (*Lancet*, Dec. 16, 1899) one is interested to know whether definite focal lesions in these brain areas by tumor or abscess will give this symptom. It should certainly be looked for. If present, it may rank with astereognosis in focalizing value. Even if respiratory arrest and acceleration are functions presided over by relatively large brain areas, which seems to be the case for the stereognostic instinct the former may still broadly prove of focalizing value. To settle the latter point, further careful experimental and clinicopathological work is necessary.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Agglutination of Tubercle Bacilli in Animals.—The blood-serum of healthy rabbits never agglutinates tubercle bacilli but if rabbits are experimentally infected, the test is positive in only one-half of the animals, according to E. SCHWARZKOPF (*Münch. med. Woch.*, April 12, 1904). The agglutination is most frequent about three weeks after infection and gradually decreases as the tubercles surround themselves with connective tissue. This corresponds with the clinical experience that the phenomenon is more common with tuberculous patients in the first stage than with those in the third. Animals near death also failed to react. Animals infected with strongly virulent bacilli of bovine tuberculosis agglutinated less frequent than where less virulent germs of human origin were employed. Positive results were occasionally obtained where no pathological lesions were found. It seems very improbable from these experiments that the test will ever be of much diagnostic value in man.

Crystals in Icteric Feces.—In the stools of icteric patients a large number of needle-shaped crystals are often found, whose composition is not known, since insoluble in all the ordinary media. By means of a special process, T. KIMURA (*Münch. med. Woch.*, April 12, 1904) was able to isolate them in a pure condition. The ash contained much calcium and a little sodium and magnesium, which was held in combination with stearic and palmitic acid in the form of insoluble soap.

Precipitin Reaction in Mummies.—An interesting observation is recorded by J. MEYER (*Münch. med. Woch.*, April 12, 1904), showing that the precipitin reaction is absolutely specific for human blood, no matter what the source or age of this blood. The musculature of several mummies, one of them five thousand years old, was extracted and then tested in the usual way. A precipitate was only obtained when the serum of rabbits treated with human serum was added; when the serum of other animals was added, the fluid remained permanently clear, just like with fresh material.

Improvement in Widal Test.—It is often impossible for the practising physician to perform the Widal test, since he lacks the bacteriological apparatus to grow typhoid germs. Recently a permanent culture of bacilli treated with formalin has been recommended, and D. EHRSAM (*Münch. med. Woch.*, April 12, 1904) has tried this in a large number of cases and has obtained equally as reliable results as with fresh cultures. In all cases of typhoid agglutination was obtained in three to twenty-four hours, while in all other febrile disorders the test was negative.

Ferments in the Urine.—Every urine contains proteolytic ferment, and J. GROER (*Deutsch. Arch. f. klin. Med.*, Vol. 79, Nos. 5 and 6) points out that this is generally pepsin, while during the absorption of pathological infiltrates and exudates, and in diabetes mellitus,

trypsin is occasionally found. By determining the critical temperature the author could prove that gastric and urinary pepsin are identical bodies; furthermore, if the stomach in animals is extirpated no more pepsin will be excreted. During fasting the amount is considerably higher than normally. It is probable that the excess of ferment is absorbed by the blood as zymogen and is again converted into pepsin, where it encounters an acid reaction, as in the kidneys.

Cryoscopy for Exudates.—L. v. KETLY and A. v. TORDAY (*Deutsch. Arch. f. klin. Med.*, Vol. 79, Nos. 5 and 6) believe that cryoscopy is of some value in determining if a collection of fluid will be absorbed spontaneously or not. Thus, in chronic pleural exudates, absorption can be looked for where the lowering of the freezing point is close to or less than that of the blood-serum. This, however, applies only to those cases where there is no fever or other sign of pleural inflammation, since here an increase of effusion can be expected. In case of hydrothorax secondary to nephritis, the freezing point of the serum must also be determined and the figures are only of value if renal function is satisfactory. The rules for pleural fluids also hold for those depending on tuberculous peritonitis. In other peritoneal transudates, cryoscopic examination is in place only where there is no mechanical obstruction and the heart's action must always be taken into account before giving a decision. It is often hard to distinguish between exudates and transudates since the specific gravity and amount of albumin may vary within wide limits in both. The authors had hoped that cryoscopy might be of some help, but numerous experiments conducted in this direction were without result.

Pathology of Pneumobacillus Pneumonia.—There seems to be little doubt at the present day that the Friedländer bacillus is able to set up a typical pneumonia like the pneumococcus. Certain well-marked differences in the pathology of both infections are pointed out by I. KOKAWA (*Deutsch. Arch. f. klin. Med.*, Vol. 80, Nos. 1 and 2). The diseased portions of the lung are generally much increased in volume; they may involve an entire lobe or form multiple foci throughout one lobe. The cut section appears granular, rarely smooth and is characterized by an extreme slippery sensation to touch owing to the presence of a large amount of mucus, especially in the early stages. This is not, however, pathognomonic, for it also occurs in the later stages of diplococcus pneumonia. Histologically there are changes in the alveolar epithelium in the form of swelling, proliferation, desquamation and necrosis of the cells, and migration of red and white cells into the alveoli. In the stage of red hepatization, the hemorrhage is not as marked as in pneumococcus pneumonia, while during gray hepatization the fibrin formation is less pronounced. The emigrated leucocytes appear larger owing to the presence of vacuoles; they, together with the epithelial cells, form the most abundant constituents of the exudate during the later stages. The behavior of the bacilli in the diseased tissue is rather typical. They are taken up by the epithelial cells and leucocytes, which swell up and develop vacuoles in their interior. These vacuoles are derived from the mucoid capsule of the germs and always contain one or more germs. The pleura and bronchi show the same lesions as other forms of pneumonia. A number of other infections may be caused by the capsule bacillus, thus pleuritis, pericarditis, endocarditis, otitis media, abscesses, phlegmons and osteomyelitis are occasionally reported. The meninges seem to be affected equally as often as with pneumococci. The fact that a pneumonia could be set up in three guinea-pigs by injecting cultures of the Friedländer bacillus, seems to speak for the specific character of the germ.

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THE AMERICAN MEDICAL ASSOCIATION.

THE fifty-fifth annual session of the American Medical Association at Atlantic City, which was held on Tuesday, Wednesday, Thursday and Friday of this week, and a report of which will be found in our society proceedings for this week, proved to be the banner meeting of the organization.

The attendance amounting to over 2,600, was the largest ever recorded. It is the first time that the 2,000 mark has been passed. Many more New Yorkers than are usually seen were present and at the General Session it was announced by the President that all members of the New York State Society were formal guests of the Association and would have all the rights and privileges of the meeting. The various sections were very well attended and the interest aroused by the discussion of practical questions was very manifest.

One of the noteworthy features of this meeting was the enthusiastic subscription of some \$6,000 to the Dr. Walter Reed memorial fund. After the announcement of the Rush monument committee that its labors were over, Dr. Wm. H. Welch stated in very forcible way the eminent suitability of having a proper memorial for the physician who succeeded in solving the problem

of the eradication of yellow fever. After the preliminary announcements of subscriptions, among which the \$500 from the California State Society and the \$250 from Dr. Reed's brother officers were received with enthusiastic applause, the offering of subscriptions became contagious and over forty names were presented (see list in our account of the proceedings) with the promise of \$100 and about one-half as many for \$50. The work of the monument committee is to be vigorously pushed and the subject brought to the notice of Boards of Commerce and of Trade as well as large corporations, for Dr. Reed's work has definitely removed one of the great hindrances to commerce. It is thought that worthy commemoration of what he accomplished will thus be secured.

The scientific business of the meeting proved of much more than the usual interest, as was indicated by the attendance. At the medical section the discussion of typhoid fever on the first day showed that all are now agreed as to the necessity for the early diagnosis and surgical treatment of typhoid perforation. This diagnosis must not be made from the subsequent peritonitis but from the symptoms following immediately upon perforation. Dr. Osler considers that any sudden change in the condition of a typhoid patient must be made the subject of careful investigation.

Dr. Wilson, of Philadelphia, whose opinion as to the advisability of immediate operation for perforation in typhoid fever, announced nearly twenty years ago, is now a classic *locus* for comment, says that he hopes that the time will come when operations for the relief of severe and threateningly progressive hemorrhage in typhoid fever will be as common as are now the operations for intestinal perforation. It seemed a far away ideal, twenty years ago, that typhoid fever patients should, within two to three hours after perforation, be in the surgeon's hands, but the happy consummation has come with most gratifying results. Not to progress is to recede, and undoubtedly the next step will be the tying of bleeding arteries.

In the surgical section, while the surgery of the lower part of the abdomen with the inevitable appendicitis still continues to occupy a prominent place, there is a distinct trend toward a greater interest in the upper abdominal segments. Discussions were mainly occupied with various forms of enterostosis and with the surgery of stomach, biliary and pancreatic affections. In the

midst of these there came the consideration of one of the conditions—rupture of enlarged mesenteric glands—which simulate perforation of the intestines in typhoid fever. This is undoubtedly the condition the spontaneous cure of which has given rise to the impression that typhoid perforation is not necessarily fatal, even when no fecal fistula follows. Dr. J. C. Wilson described some cases of simulating perforation in typhoid which are related to these.

The new organization of the American Medical Association is now working smoothly and it is evident that close union of the various component bodies on a thoroughly representative basis is possible without undue expenditure of time in administrative effort and with the proper exclusion of clique politics. It seems that an era of splendid accomplishment for the profession is about to commence and that professional organization may be looked to with confidence for the prevention of many ills and the advancement of all legitimate interests.

THE TUBERCULOSIS CONGRESS.

AN enthusiastic audience of nearly 500 physicians, representing the entire United States, greeted Dr. William Osler as he opened the "National Association for the Study and Prevention of Tuberculosis" last Monday night at Atlantic City.

Those who have this movement near at heart, and the entire medical profession comes within this category, should feel encouraged by the assurance that they are finally to have a Congress representative of the entire profession; that is, capable of doing work that is greatly needed.

At this meeting the work of organization was practically completed and a Board of Directors of thirty members appointed, committees formed and working plans projected.

As outlined in the Constitution and By-laws, the objects of this Association shall be: (a) the study of tuberculosis in all its forms and relations; (b) the dissemination of knowledge concerning the causes, treatment, and prevention of tuberculosis; (c) the encouragement of the prevention and scientific treatment of tuberculosis.

In another place we give a list of the officers and committees of the new body, and predict for this movement a success far beyond the anticipations of those who spoke last Monday night, at this memorable occasion, not the least among whom was Dr. E. L. Trudeau, the captain and veteran fighter of the "white plague."

ISOLATION OF TYPHOID GERMS.

FOR years past it has been the favorite object of bacteriologists to provide an easy method for the identification of the typhoid bacillus in the stools, or other products of the body, and likewise in water. With these attempts are associated the records of many more or less successful maneuvers, such as those of Elsner, Piorkowski, and others, which have successively been tried, and abandoned, because lacking the prime element of practicability. Even the latest suggestion—the lactose-crystal-violet-litmus mixture of Drigalski and Conradi—has failed to meet with the favor due to a really good and feasible method.

Nothing daunted, however, the German bacteriologists have kept faithfully at the irksome research, and have actually, it would seem, brought the solution of the problem within the reach of the profession—as a body of practical physicians, interested not in methods for themselves, but for their clinical bearing and results.

The new light has come out of the idea of Prof. Rubner, of Berlin, to investigate the action of the various alkaloids on the growth of typhoid and of coli. This resulted in Roth's discovery (*Hyg. Rundschau*, May 15, 1903) that caffeine exercises a markedly deleterious action on the coli group of bacilli, whereas it does not interfere with the development of the typhoid group, including the so-called paratyphoid organisms. The discovery, which in itself is not practically applicable, marked the point of departure of a further series of investigations, both by Roth, and Ficker and Hoffmann, looking to its clinical adaptation. The results of their investigations, which are embodied in the third number of the *Archiv für Hygiene* for the current year, must be characterized as extremely encouraging, and a very notable advance on all previous attainments.

As a matter of fact, they have asserted that it is possible with the methods thus elaborated by them to detect typhoid bacilli when these are present in the ratio of 1 to 53,000 of other forms. The essence of the method the details of which must be sought elsewhere, consists in the preliminary multiplication of the typhoid germs by cultivation for thirteen hours in a bouillon medium containing a fixed percentage of caffeine and of crystal violet. From the growth thus obtained in a medium especially favorable to the typhoid germ, cultures are made according to the method of Drigalski-Conradi, which allows of

their easy identification. Stools or water may be treated in this manner, and may be said, for practical purposes, to be typhoid-free, if they fail to react.

It is hardly necessary to dwell on the great importance of this advance in technic. It may be objected that the method is cumbersome and entails a delay of a day or more. These objections are valid, and certainly militate against the serviceability of the method as compared with that of the agglutination test, or of blood cultures as diagnostic criteria. On the other hand, it is undoubtedly true that the method is superior to the Widal, inasmuch as it gives positive results much earlier in the disease. Finally, the conditions which obtain in private practice are certainly far more favorable to bacteriological examination of the feces than of the blood—a fact which lends the new method an advantage which is none the less real for being purely accidental.

ECHOES AND NEWS.

NEW YORK.

Addition to the University and Bellevue Medical College.—In view of the large classes at the University and Bellevue Hospital Medical College, and the prospect for a very large entering class in the fall, the Council of New York University, at a meeting last Tuesday, determined to purchase land adjoining the new college building, on First Avenue, between Twenty-fifth and Twenty-sixth streets, and to proceed at once with the erection of a six-story fireproof building for the clinics and laboratories of the Medical College. The building will harmonize in general style with the building erected for the Medical College, on the corner of Twenty-sixth Street and First Avenue, in 1898, and will be of light brick with trimmings of Indiana limestone, a large part of the front being merely a framework of iron and glass in order to give the greatest possible amount of light for laboratory work. On the rear the building will adjoin the Carnegie Laboratory, which belongs to the University, and is used also for laboratory work. The first floor of the building will be given up to the free dispensary of the college, which is at present treating more cases daily than any other dispensary in the city, with one exception, the total number during the past year reaching 150,000 cases.

Transferred to the Police Department.—Dr. E. T. Higgins, who for three years has been a coroner's physician, was transferred to-day by the Municipal Civil Service Commission to the Police Department. Dr. Higgins is a graduate of the Bellevue Medical College. He has served as surgeon and physician at Bellevue, Harlem, and City Hospitals.

Changes in University and Bellevue Medical Colleges.—A plan presented by the medical faculty for an elective fifth year course for medical students, was approved at the meeting of the Council of the New York University. The following appointments were made: Phœbus A. Levene, M.D., Herter lecturer on pathological chemistry for session 1904-05;

Stanley D. Curran, M.D., instructor in physical diagnosis; James H. Potter, M.D., instructor in physical diagnosis; W. Reid Blair, M.D., assistant in pathological histology; C. J. Anthony, M.D., assistant in physical diagnosis. Promotions in the corps of instructors were approved as follows: George B. Wallace, M.D., lecturer on pharmacology, to be assistant professor of pharmacology; Hermann A. Haubold, M.D., lecturer on clinical surgery, to be professor of surgery; Henry W. Wandless, M.D., to be chief of Clinic, Department of Ophthalmology; Robert J. Wilson, M.D., instructor in bacteriology, to be lecturer on bacteriology; William M. Ford, M.D., assistant to chair of surgery, to be instructor in surgery; Julius A. Becker, M.D., assistant demonstrator of anatomy, to be demonstrator of anatomy; Edward S. McSweeney, assistant demonstrator of anatomy, to be demonstrator of anatomy.

PHILADELPHIA.

Wills Hospital Clinics.—The Surgical Staff of Wills Hospital, Race Street, between Eighteenth and Nineteenth streets, Philadelphia, invites the delegates and members of the American Medical Association to attend a series of special clinics to be held at the hospital on Monday and Tuesday afternoons at two o'clock, June 13 and 14, immediately following the meeting of the Association in Atlantic City, N. J. On Monday afternoon, June 13, through the courtesy of the Board of City Trusts of Philadelphia, the privileges of the hospital have been granted to Prof. A. Maitland Ramsay, M.D., of Glasgow, Scotland, the official guest of the American Medical Association, who, under the guidance of Dr. Charles A. Oliver, will demonstrate and operate upon interesting cases occurring in the clinics of Drs. W. W. McClure, Oliver, Samuel D. Risley, S. Lewis Ziegler, and McCluney Radcliffe. In the evening, at 8.15 o'clock, a meeting of the Wills Hospital Ophthalmic Society will be held at the hospital, to which all ophthalmologists are invited. The subject for discussion will be "Enucleation and its Substitutes." Dr. George C. Harlan will preside. After the meeting an informal reception to Dr. Ramsay by the attending surgeons to the hospital will be held at the hospital. On Tuesday, June 14, Prof. Ramsay, under the guidance of Dr. Frank Fisher, will demonstrate and operate upon the interesting cases occurring in the clinics of Drs. Fisher, Conrad Berens, P. N. K. Schwenk, William Zentmayer, and William C. Posey. After the clinics, the assistant surgeons to the hospital will entertain Prof. Ramsay by a visit to Willow Grove Park for supper, music, and electric fountain display, returning to the city by eleven o'clock. Trolley cars for the park will leave the hospital door at five o'clock. All visiting ophthalmologists are more than welcome to join in the party.

Red Bank Sanitarium.—The twenty-eighth annual season of this outing place for poor children was opened Saturday, June 4. Addresses were made by a number of the officers of the association, and 2,000 children were entertained at the grove.

Dr. Hutchinson on Hospital Staff.—Dr. James P. Hutchinson has been elected a member of the surgical staff of the Pennsylvania Hospital to fill the vacancy made by the death of Dr. W. Barton Hopkins. Dr. Hutchinson, whose father was a well-known member of the hospital staff, had for some time been connected with the dispensary of the hospital.

American Climatological Association.—The following were elected officers of this society at the last annual meeting, held in Philadelphia, June 2 to 4, 1904: President, Dr. W. F. R. Phillips, Weather Bureau, Washington, D. C.; First Vice-President, Dr. S. G.

Bonney, Denver, Col.; Second Vice-President, Dr. S. D. Risley, Philadelphia, Pa.; Secretary and Treasurer, Dr. Guy Hinsdale, Hot Springs, Va.; Member of the Council, Dr. J. C. Wilson, Philadelphia; Member of the Executive Committee of the Congress of American Physicians and Surgeons, Dr. F. I. Knight, Boston, Mass.; Dr. R. G. Curtin, Philadelphia, alternate.

Finsen Laboratory to be Erected.—The University Hospital is to have a Finsen light apparatus in working order by the end of the year. An appropriation of \$25,000 by the State will permit of the installation of the plant which will be placed in an additional story to the Agnew pavilion of the hospital.

CHICAGO.

Hydrophobia.—Director J. F. Biehn, of the City Municipal Laboratory, recently sent out a warning of danger of a hydrophobia epidemic. Muzzling all dogs that appear in public is the remedy advocated by him. The Chief of Police has issued orders for the muzzling of dogs. Dr. Biehn has just completed analyses of the bodies of three dogs, and has found that all had hydrophobia.

Causes of Mortality in War.—In a recent editorial in the *Chicago Tribune*, the causes of mortality in war were discussed, and among other things the editorial states that, of all wounds treated by medical officers of the union armies in the Civil War about four-tenths of 1 per cent., or 922 out of 240,712, were saber or bayonet wounds. In the Crimean war the English and French had 2½ per cent. of such wounds; in the Schleswig-Holstein war about 3 per cent., while in the Franco-Prussian war the records show that the Germans received less than one-third of 1 per cent. A striking commentary this upon the advance of modern military science, showing that with the general adoption of long range firearms the saber and bayonet are rapidly falling into disuse, and the time is coming, if it has not already arrived, when those old and honored weapons will become obsolete. But it is not the bullet or the artillery fire which strikes down the largest numbers of men. It is disease. In the Civil War one man out of every 6.7 was wounded in action; one of every 38 died of his wounds; one of every 42.7 was killed in action. Of the total mortality among colored soldiers 90 per cent. was from disease. Of the total mortality among the white volunteers, 70 per cent. was owing to disease; among the white regulars, 60 per cent.

Catholic Charities.—According to the will of the late Thomas Brennan, member of the Board of Education, he bequeathed \$1,000 each to St. Joseph's Hospital, St. Elizabeth's Hospital, Mercy Hospital and Alexian Brothers' Hospital.

Prosecution of Hanish.—The State Board of Health has prosecuted Ottoman Hanish, charged with violating the medical practice act, by the use of "torture needles and lotus oil injections." A warrant has also been secured by the State Board of Health for the arrest of "Dr." August van Bysterveldt, who is charged with practising medicine without a license.

Smallpox.—The Department of Health directs attention to the fact that of the 80 cases discovered in Chicago since the first of the year, the most searching examination has failed to find a single one who had been properly or recently vaccinated.

Joint Meeting of the International Association of Railway Surgeons and the American Academy of Railway Surgeons.—A joint meeting of these two societies was held in Chicago, June 1, 2 and 3. The convention met in the Assembly Hall of Northwest-

ern University. During the first day the sessions were presided over by Dr. James H. Ford, of Indianapolis, President of the International Association of Railway Surgeons, and the sessions of the second and third days by Dr. S. C. Plummer, President of the American Academy of Railway Surgeons. An Address of Welcome was delivered by Dr. Wm. A. Evans, of Chicago, which was responded to by Dr. George Ross, of Richmond, Va.

President Ford discussed the use and abuse of the railway surgeon in his Presidential Address; and President Plummer selected as the subject of his Address, "Following and Assisting Nature." Eighteen interesting papers were contributed by as many members and received appropriate discussions.

The following resolution was introduced:

RESOLVED, That at the close of the present session, the International Association of Railway Surgeons dissolve its present organization for the purpose of organizing the American Association of Railway Surgeons, provided that a union be made with the American Academy of Railway Surgeons at the meeting set for that purpose.

Resolved, Further, That the Executive Board of this Association be authorized to join with the Executive Board of the American Academy of Railway Surgeons and organize the American Association of Railway Surgeons.

The resolutions were unanimously adopted.

The two Associations having dissolved, to become amalgamated into one Association, known as the American Academy of Railway Surgeons, the first order was the nomination of a temporary Chairman. On motion of Dr. Hollowbush, of Rock Island, Ill., Dr. D. S. Fairchild was elected temporary chairman. Dr. Louis J. Mitchell was elected Temporary Secretary.

Dr. A. I. Bouffleur, of Chicago, presented the report of a joint committee on Constitution and By-Laws, for governing the new organization, and on motion this report was accepted and adopted as read.

The following are the officers of the new organization, the American Academy of Railway Surgeons: President, Dr. John E. Owens, Chicago; Vice-Presidents, Dr. R. W. Corwin, Pueblo, Col.; Dr. G. D. Ladd, Milwaukee, Wis., and Dr. H. C. Fairbrother, East St. Louis, Ill.; Treasurer, Dr. T. B. Lacey, of Council Bluffs, Iowa; Secretary, Dr. H. B. Jennings, of Council Bluffs, Iowa; Editor, Dr. Louis J. Mitchell, Chicago; Executive Board: Dr. D. S. Fairchild, Des Moines, Iowa, and Dr. A. I. Bouffleur, Chicago, three-year term; Dr. S. C. Plummer, Chicago, and Dr. A. L. Wright, of Carroll, Iowa, two-year term; and Dr. W. S. Hoy, Wellston, Ohio, and Dr. J. R. Hollowbush, Rock Island, Ill., one-year term.

There was considerable discussion relative to the time for holding the next annual meeting, but this matter was left entirely to the Executive Board. It would seem from the suggestions made by different members that the meeting will be held next year, some time in the fall.

GENERAL.

List of Directors of Tuberculosis Association.—*Massachusetts*—E. O. Otis and V. Y. Bowditch. *Connecticut*—J. P. C. Foster. *New York*—S. A. Knopf, H. M. Biggs, E. L. Trudeau, and E. T. Devine. *Pennsylvania*—L. F. Flick, M. P. Ravenel, J. M. Anders, and J. S. Pearson. *New Jersey*—R. Hoffman. *Maryland*—W. H. Welch, William Osler, E. Jacobs, and J. S. Fulton. *District of Columbia*—G. M. Sternberg. *North Carolina*

—C. L. Minor. *Colorado*—F. E. Solly. *Illinois*—E. Klebs and R. H. Babcock. *Minnesota*—H. M. Bracken. *Missouri*—Wm. Porter. *Indiana*—J. N. Hurty. *Michigan*—V. C. Vaughan. *Ohio*—C. O. Probst. *California*—N. Bridge. *Texas*—M. M. Smith. *Marine Hospital*—General Walter Wyman. *Army*—Surgeon Bushnell, Fort Bayard. Others may be appointed by the present Board to make representation more complete.

Officers of National Tuberculosis Association.—President, Dr. E. L. Trudeau; Vice Presidents, Drs. William Osler, Hermann M. Biggs; Executive Committee, Drs. J. N. Hurty, E. O. Otis, E. Klebs, M. P. Ravenel, and Mr. E. T. Devine. Dr. Osler was made chairman of a committee of five to represent this Association at the Paris International Convention.

Constitution and By-laws of the National Association on Tuberculosis.—The Committee, appointed in Philadelphia on March 28, for the purpose of organizing a new Society for the Study of Tuberculosis, met at the house of Dr. Hermann M. Biggs in New York on April 22, and proposed the following Constitution and By-Laws to be submitted to those interested especially in the subject at a meeting in Atlantic City on June 6, 1904:

CONSTITUTION. Article I.—Name.—The name of this Society shall be The National Association for the Study and Prevention of Tuberculosis.

Article II.—Objects.—The objects of the Association shall be: (a) the study of tuberculosis in all its forms and relations; (b) the dissemination of knowledge concerning the causes, treatment, and prevention of tuberculosis; (c) the encouragement of the prevention and scientific treatment of tuberculosis.

Article III.—Meetings.—The meetings shall be held at such times and in such places as may be directed under the By-Laws.

Article IV.—Incorporators.—The names and residences of the Incorporators are:

BY-LAWS. Article I.—Membership.—This Association shall consist of three classes of members: (a) Members; (b) Life Members; (c) Honorary Members. (a) Members: those persons who have participated in the organization of the Association at the meeting in Philadelphia on March 28, 1904, and such persons as shall from time to time be elected by the Board of Directors. The dues of members shall be \$5 a year; (b) Life Members: Members may become life members upon the payment of \$200; (c) Honorary Members: Persons distinguished for original researches relating to tuberculosis, or eminent as sanitarians, or as philanthropists who have given material aid in the Study and Prevention of Tuberculosis may be elected Honorary Members.

Article II.—Election of Board of Directors.—The Association shall at its first meeting elect a Board of twenty-five Directors, divided into five groups of five each, to serve one, two, three, four and five years, the duration of office to be determined by lot; thereafter, retiring Directors who have served a full term of five years shall not be eligible for re-election the year of retirement, provided, however, that this restriction shall not apply to the secretary or treasurer. At succeeding annual meetings five Directors shall be elected for terms of five years, or in case of vacancies in any of the groups for the unexpired terms.

Article III.—Election of Officers.—The Board of Directors shall annually elect from its own number a President, two Vice Presidents, a Secretary and a Treasurer, who shall be the officers of the Association as well as of the Board.

¹ It was voted, if feasible, that the Association be incorporated by an Act of Congress, and Dr. Sternberg and Dr. E. Jacobs were named a Committee to consider the best manner of carrying out this motion.

Article IV.—Committees.—**Section 1.** The Board of Directors shall appoint an Executive Committee of seven directors, of which the president and secretary shall be members ex-officio, to which shall be entrusted all the executive work of the Association. **Sec. 2.** The Board of Directors is empowered to appoint representatives on the International Committee on Tuberculosis; it shall also from time to time appoint such committees as may be necessary for scientific and educational work, and for the holding of meetings and congresses. **Sec. 3.** The Board of Directors shall make its own rules; the government of the Association, the planning of work, the arrangement for meetings and congresses, and all other matters appertaining to legislation and direction shall be in its hands; committees shall have the power to execute only what is directed by the Board.

Article V.—Quorum.—Seven Directors shall constitute a quorum of the Board of Directors.

Article VI.—Meetings.—There shall be at least one stated annual meeting of the Association at a time and place to be fixed by the Board of Directors. Other meetings of the Association may be called by the Board at such times as it shall deem proper. The Executive Committee shall hold stated and other meetings as may be directed by the rules of the Board of Directors.

Article VII.—Moneys.—The moneys received from membership dues and from all other sources shall be used for defraying the expenses of the Association, and for furthering its objects under the direction of the Board of Directors.

Article VIII.—Amendment of By-Laws.—The By-laws may be amended by the Board of Directors; for amendment a two-thirds vote of the entire Board shall be necessary. No amendment shall be adopted within thirty days of its proposal or without at least twenty days' notice of the meeting at which it is to be voted upon, which notice shall set forth the amendment in full.

American Dermatological Association.—At the twenty-eighth annual meeting of the American Dermatological Association, which was held at the International Hotel, Niagara Falls, on June 2 and 3, 1904, the following officers were elected for the ensuing year: President, Dr. William T. Corlett, of Cleveland, Ohio; Vice-President, Dr. Frank H. Montgomery, of Chicago; Secretary and Treasurer, Dr. Charles J. White, of Boston; Member of Council, Dr. John A. Fordyce, of New York. It was decided to hold the next meeting of the Association in New York City, on December 28, 29 and 30, 1905.

Patent Medicines and Postal Department.—Postmaster-General Payne recently made public the attitude assumed by his Department toward patent medicine advertisements in the mails. A large number of complaints having been received by the First Assistant Postmaster-General protesting vigorously against the United States mails being used for the purpose of circulating newspapers and other literature containing advertisements of alleged cures for loss of manhood, vitality, etc., the Acting Postmaster-General transmitted a number of these advertisements to the Assistant Attorney-General for the Post Office Department, with the request for an opinion as to whether or not their transmittal through the mails constituted a violation of law. Mr. Robb, the then Assistant Attorney-General for the Post Office Department, rendered an opinion holding such advertisements a violation of what is known as the "obscene law." The only intention which has ever been entertained by the administrative officers is to suppress the advertisements which the law officer of the Department has held to be obscene. Of course, the Post Office Department has never had any intention of starting a crusade upon patent medicines or of establishing a censorship upon advertisements printed in newspapers. There has been no change in the policy

or practice of the Department. The facts simply are that certain abuses having been called to its attention it has acted thereon as required by law. In the regular course of business in the office of the Assistant Attorney-General a number of cases were presented in which the so-called cures for lost manhood and lost vitality were complained of as being worthless, as well as the literature of the company selling the article being obscene. Analysis of these so-called remedies developed the fact that in most instances the ingredients were simply starch and sugar. In a number of instances the pills and drugs contained ingredients injurious to the system and forbidden by law to be sold. It having thus appeared that these companies were defrauding the public by means of false and fraudulent representations made through the mails, the issuance of fraud orders was recommended to the Postmaster-General and accordingly issued by him. No action has been contemplated by the Department save in those cases of obscenity and fraud.

Anti-mosquito War.—About fifty men are at work ditching the Hackensack meadows under the direction of the Board of Health, which has begun a war on mosquitoes.

OBITUARY.

Dr. MATTHEW LEEPER died on June, of dropsy at the home of George Eastment in Glen Cove, Long Island. He returned recently from the Philippine Islands. He was born in Arkansas in 1854. At the age of eighteen he became Indian interpreter for the United States Government and three years later was made a commissioned officer of the Fourth United States Cavalry. For ten years he saw active service in the West and on several occasions received honorable mention for bravery in battles with the Indians. At the expiration of the ten years he retired from the army and took up the study of medicine. He subsequently received diplomas from three medical colleges. He made a specialty of throat and ear diseases. He went to Chicago in 1882 and remained there until the Spanish War broke out, when he enlisted as a volunteer surgeon. He remained in the army until the close of the war in the Philippines. For the last year and a half he had been president of the Board of Health of the island of Mindoro. He was enthusiastic over the Philippines, and believed there were great possibilities for the islands. He was taken sick on Jan. 1, and as his condition did not improve he decided to return home.

Dr. GEORGE WASHINGTON BROOKS died in this city June 3, at the age of eighty-seven years. He retired from active practice eight years ago and spent his time since then in country resorts and partly in sanitariums, as he suffered four strokes of apoplexy, the last of which proved fatal. Born in Portland, Me., Dr. Brooks came of a distinguished family. His brothers, James and Erastus, were the editors of the old *New York Express*. Mrs. Brooks, who was Miss Jane Roberts, of Utica, and one son, Dr. George Frederick Brooks, survive him.

Dr. ANNA E. PARK, whose charitable work of twenty-seven years caused the poor of the west side to know her as "The Good Doctor," died of pneumonia on May 30, at her home, 367 West Twenty-third street, New York. Her illness was contracted five days previously, while she was attending a poor patient. The doctor was born in Connecticut seventy-two years ago and was graduated as an eclectic in Philadelphia in 1860. During the war she served as a Red Cross nurse, and was a member of the National and New York State Eclectic Societies.

Dr. FREDERICK C. SCHAEFER, professor of clinical surgery in the Chicago Post-Graduate Medical School, surgeon-in-chief of St. Hedwig's Hospital, and gynecologist to St. Elizabeth's Hospital, died suddenly June 3, at his

home in Chicago, from acute gastritis. He was born in Galena, Ill., in 1849, and came to Chicago in the early seventies. He received his professional training in the Chicago Medical College. After being graduated, he became professor of anatomy. When the institution was merged with Northwestern University, Dr. Schaefer continued as a member of the Faculty. At the time of his death he was also consulting surgeon to the Mary Thompson Hospital for Women and Children. He was a frequent contributor to medical journals. He was also a member of the American Medical Association, of the State and local medical societies. He leaves a wife, one son, and three daughters.

SOCIETY PROCEEDINGS.

THE AMERICAN MEDICAL ASSOCIATION.

Fifty-fifth Annual Meeting, held at Atlantic City, N. J., June 7 to 10, 1904.

GENERAL SESSION, JUNE 7, 1904.

At the first General Session the annual meeting of the American Medical Association was formally opened by prayer by the Rt. Rev. John Scarborough, Bishop of Trenton, of the Protestant Episcopal Church. After addresses of welcome to the Association by State officials of New Jersey and of the Mayor of Atlantic City, and the response by the First Vice President of the Association, Dr. G. C. Savage, of Nashville, Tenn., the committee of arrangements announced the very full program of social events which had been prepared.

The important business of this first General Session was the introduction of the subject of the Dr. Walter Reed Memorial and the beginning of the subscriptions to it with an enthusiasm that would seem to promise a speedy realization of the amount originally proposed for the memorial and with an inspiration that would seem to show the possibility of exceeding first intentions.

Worthiness of the Object.—Dr. William H. Welch, of Baltimore, said that no worthier object could possibly be proposed for the consideration of American medical men. Dr. Walter Reed was entirely a product of American training methods in medicine. His success may be said to be due to the typical American spirit of enterprising invention put at the service of medicine. What he accomplished is one of the greatest advances in medicine. The only thing it can possibly be compared to is the conquest of smallpox by vaccination. For his discovery of the mosquito doctrine of the distribution of yellow fever will lead to the total eradication of that disease eventually, as it has already completed what looked like the hopeless task of ridding Cuba completely of the affection which was supposed to be indigenous in the very soil, for it had been known to exist continuously for over a century.

National and Popular not Medical.—Dr. Welch said that the memorial to Dr. Reed should be worthy of this marvelous accomplishment. For this purpose it seems well to make appeal not only to the narrow circle of medical interests but to the business interests generally throughout the country. Boards of Trade and Commerce should be brought to see how much was accomplished by one man and would then realize the eminent suitability of giving him a proper memorial. To say nothing of the number of lives that have already been saved and will be in the future and the immense amount of human suffering spared, there is the further consideration, so unworthy to be placed beside the humanitarian motives, yet not without its weight, that economic advantages of great moment will flow from

it. It has been calculated that the last serious epidemic of yellow fever—that of 1878—cost this country several hundred millions of dollars. Now we know that through Dr. Reed's work this useless expense will never be called for again.

Honor to Medical Men.—Dr. Theodore Diller, of Pittsburg, Pa., said that all classes of public benefactors seem to receive recognition before the great medical discoverers. The commanders and other heroes of our wars, the Judges and literary men, all receive their memorials at the hands of the public, but the doctor, as is so often the case in private life, is forgotten. In England, however, Jenner, the discoverer of vaccination, has been worthily honored by English professional brethren; it seems but right that for as worthy an object American physicians should be ready to unite. It has taken long to raise the monument to Rush, but at last it is accomplished. May the greater union among the medical profession in this country now be typified by the better success of the monument movement for Dr. Reed.

Enthusiastic Subscriptions.—Dr. W. W. Keen, of Philadelphia, then announced that the committee was ready to receive subscriptions and gave the names of a number of ex-Presidents of the American Medical Association who had expressed their willingness to contribute \$100 each to the fund. After this list other names were announced and from all over the large hall subscriptions poured in. Nearly \$7,000 was subscribed within a quarter of an hour. The California State Medical Society subscribed \$500. The officers of the United States Marine Hospital Service, on duty in Washington, many of whom had been personally acquainted with Dr. Reed, and some intimately associated with him in his work on yellow fever, subscribed \$250. Subscriptions of \$100 each were received from the following: Dr. C. A. L. Reed, of Cincinnati, John A. Wyeth, of New York, Dr. W. W. Keen, of Philadelphia, Pa., H. O. Marcy, of Boston, Mass., Surgeon-General Sternberg, Surgeon-General Wyman, of Marine Hospital Service, Dr. Jos. D. Bryant, of New York, Dr. E. G. Janeway, of New York, Dr. Frederick C. Shattuck, of Boston, Dr. Arthur T. Cabot, of Boston, Dr. Joseph Matthews, of Louisville, Dr. H. C. McCormack, of Kentucky, Dr. Wm. H. Welch, of Baltimore, Dr. A. A. Smith, of New York, Dr. William Osler, Baltimore, Dr. A. H. Smith, of New York, Dr. Victor C. Vaughan, of Ann Arbor, Mich., Dr. H. A. Kelly, of Baltimore, Dr. Jno. H. Musser, of Philadelphia, Dr. S. Weir Mitchell, of Philadelphia, Dr. Wm. J. Mayo, of Rochester, Minn., Dr. Francis Kinnicutt, of New York, Dr. J. B. Murphy, of Chicago, Dr. H. O. Walker, of Detroit, Dr. Palmer Dudley, of New York, Dr. J. C. Wilson, of Philadelphia, Dr. Floyd McRae, of Atlanta, Ga., Dr. Chas. G. Stockton, of Buffalo, N. Y., Dr. Abraham Jacobi, of New York, Dr. Robert F. Weir, of New York, Dr. George Ben Johnson, of Richmond, Va., Dr. Jos. Peterkin, of Seattle, Wash., Dr. DeLancey Rochester, of Buffalo, N. Y., Dr. Barlow, of Los Angeles, Cal., Dr. Alvin Hubbell, of Buffalo, N. Y., Dr. Mackenzie, of Portland, Ore., Dr. A. MacLaren, of St. Paul, Dr. W. S. Halsted, of Baltimore, Dr. Kober, of Washington, D. C., Dr. C. J. McClintock, of Detroit, Mich., Dr. Rosa Wiss, of Meridian, Miss. After these a number of subscriptions of \$50 were received. The committee expressed its intention of giving those interested in commerce with tropical ports an opportunity to subscribe, since none benefited more than they by Dr. Reed's discovery.

The session closed with the introduction of the new president, Dr. John M. Musser, by Dr. Billings, and the delivery of the President's Address which will be found on page 1105 of this week's issue of the MEDICAL NEWS.

SECTION ON MEDICINE.

FIRST DAY—JUNE 7TH.

The Adaptation of Pure Science to Medicine.—The scientific business of the Section on Medicine was opened by the address of the Chairman of the Section, Dr. Alexander Lambert, of New York, with the above subject. He reviewed some of the details of recent progress in medicine. Tetanus, for instance, has been demonstrated to spread along the nerves and so there has come the idea that instead of being injected directly into the circulation where it is so much diluted the antitoxin might be expected to do its work of neutralization more effectively if placed in a position to follow the same paths. Dr. Lambert has seen two patients with tetanus treated by the direct injection of the antitoxin into the nerve bundles with successful results. As in both cases the severity of the initial symptoms seemed to make the prognosis very unfavorable, if not absolutely fatal, the new method of treatment will deserve to be followed with attention, so as to determine its absolute value.

Preventive Inoculations.—This subject, though followed with such hopeful anticipations at the beginning, because of the analogy with vaccination, has proved very disappointing. There are, however, some results that are encouraging. Preventive inoculations for typhoid fever seem to have been followed by some good results. Statistics apparently establish that fifty per cent. of those who are exposed to typhoid fever after inoculation and who would have, according to the chances of the conditions, taken the disease prove able to resist it. On the other hand fifty per cent. of those who take the disease after inoculation have it in very mild or even abortive form, and the mortality is much lower among the inoculated than among the rest of the population.

The Widal Test.—The agglutination reaction has proved of great diagnostic value when positive, but when negative nothing can be argued from the fact. The agglutinative power bears no relation to the severity of the disease nor does it tell anything as to resistive powers or as to the prognosis of the case. In severe cases it may be less marked than in those of mild type, and it may even decrease with the severity of the symptoms. During convalescence it may be more marked than at the height of the disease. Unfortunately, in certain cases what one pathologist will declare to be a positive reaction, another may consider as of negative significance, and some have even taken to use the expression, doubtful reaction, which is to be deprecated. The laboratory is often unable to make the diagnosis and this fact should be frankly stated, as otherwise there may be an increase of the suspicion of the pathologist by the clinician which unfortunately exists and which sometimes leads to specimens being submitted without the data that can help the pathologist and to which he has every right.

Lumbar Puncture.—This diagnostic aid has proved especially serviceable in the recent epidemic of cerebrospinal meningitis for the differentiation of that disease from the other forms of meningitis and has besides proved of some value from the standpoint of treatment. This method of diagnosis is the only one that can show with certainty the presence of sporadic cases of the disease when no epidemic is in progress.

Chemistry of the Urine.—In this there remains most to do. The presence of albumin and casts is helpful only in a general way. No direct connection exists, as Dr. Cabot has shown, between the urinary findings under present methods and the post-mortem observations. The difference between acute and chronic conditions can in general be recognized but scarcely more

than this. On the other hand, nothing definite as to prognosis can thus be determined. Uremia may supervene quite unexpectedly, even where the patient has been carefully watched. The real causation of uremia is not yet understood. Anuria may exist for some days and cause the death of the patient from failure of the kidneys to remove excrementitious material, yet no uremic symptoms manifest themselves. The total solids in the urine seem, however, to be a better indication of the possibility of uremia than the albumin. In this matter much remains to be done, and much that has been apparently accomplished has had to be undone when brought to the test of actual practical experience. Eclampsia has usually been considered, until quite recently, to be a form of uremia incident to the pregnant state. Its occurrence, however, bears no relation to the presence of albumin and casts in the urine, for it has been known to develop when these were not noted and, on the other hand, some patients with considerable albumin and casts pass through pregnancy without a symptom of eclamptic character. Recent investigations seem to show that eclampsia is connected with a condition of the liver not unlike the pathological process which, in more advanced cases, is known as acute yellow atrophy of the liver. Some liver degeneration seems a not unusual accompaniment of pathological pregnancies and even such conditions as hyperemesis—the pernicious vomiting of pregnancy—may be connected with liver change of some kind. These are the problems now before the medical profession for solution.

Pernicious Anemia and the Stomach.—Dr. Charles G. Stockton, of Buffalo, presented an analysis of 24 cases of pernicious anemia. In the majority of the patients there were some digestive disturbances. At times not gastric alone but also intestinal. Some of the patients had anorexia as a prominent symptom but most of them had reasonably good appetite. Most of the cases of true pernicious anemia present the symptom achylia gastrica; that is, there is no formation of chyle in the stomach and no gastric digestion. There is no hydrochloric acid in these cases and, in the range of Dr. Stockton's experience, once HCl has disappeared it does not make its appearance again. The appetite and general condition may improve in correspondence with an improvement of the blood condition but gastric digestion remains as before.

Achylia Gastrica.—In his studies of achylia gastrica, Dr. Stockton has not found that this is by any means necessarily connected with pernicious anemia. He has seen cases of it which have existed for many years without any tendency to the production of anemia of the pernicious variety, though when the symptom-complex is associated with diarrhoea, then there is secondary anemia. When achylia gastrica exists alone, the motor sufficiency of the stomach is intact; and so long as the viscus is able to pass on the food which it contains, no difficulty is experienced. At times there seems to be even an increase of stomach motility. In pernicious anemia an increase of the stomach motility is sometimes noted, but, later, this is apt to become weaker, apparently as the result of the changes in the blood, not supplying sufficient nutrition to the stomach wall.

Cardiac Symptoms.—The most interesting feature of pernicious anemia is the slight amount of cardiac disease which exists in connection with the severest pathological conditions of the blood. Even hard workers do not complain much of their hearts and do not suffer discomfort in their hearts, or, except for a certain amount of dilatation, are there any physical signs. Hemis murmurs exist very often, but they are not as common as in chlorosis. They are to be found over the large vessels and in the systolic sound of the heart.

They change very much with the varying conditions of the patient's blood and may even disappear during intermissions of the disease. Since Dr. Billings called attention to the fact that spinal symptoms are common in connection with pernicious anemia Dr. Stockton has found in six out of nine cases studied for this detail that they were present. There is usually an absence of any history of severe illness in the patient's past. As a rule the first symptom that is complained of is dyspnea and this is one of the commonest symptoms of pernicious anemia. Many cases of the disease are missed. Patients come with the story that they are suffering from cancer of the stomach or liver trouble, or heart disease, or locomotor ataxia. Most of these diagnoses have been confirmed by physicians who seem not to have suspected the existence of pernicious anemia, though a single examination of the blood would have revealed the presence of the disease.

Duration of the Disease.—One of Dr. Stockton's patients died in five years after a definite diagnosis of pernicious anemia could be made. One of them, on the other hand, lived only six months, but then it is not easy to determine how long the condition may have existed and may have been latent. Some other statistics of the disease are interesting. In 22 patients there was a lemon-yellow color of the skin. In only two was the characteristic yellowness absent. In some of the cases the patients had the look of being jaundiced and the diagnosis of their condition would have been difficult only for the blood examination. Very few patients suffering from the disease have a coated tongue. In 19 out of the 24 patients, there was a denuded tongue, the outer cells having died for lack of nutrition.

Hydrochloric Acid a Luxury.—Dr. Richard Cabot, of Boston, in discussing Dr. Stockton's paper said that in a careful study of 151 cases of pernicious anemia he had found hydrochloric acid absent in about five sixths of the cases. Most of these patients, however, had perfectly good digestion, in fact it was surprising how many of them were able to stand even forced feeding and yet have no stomach discomfort. As a result of his studies, Dr. Cabot came to the conclusion that hydrochloric acid is a luxury in digestion, but by no means a necessity. So long as there is no motor insufficiency of the stomach, patients have no inconvenience from their achylia gastrica. Dr. Cabot also has noticed that hydrochloric acid is absent during periods of improvement in pernicious anemia. The most surprising thing, in his experience, however, is the slight cardiac symptoms, even in the advanced stages of the disease when the clinician cannot help but know that the heart muscle is in a state of severe fatty degeneration.

Gastric Atrophy and Pernicious Anemia.—Dr. Max Einhorn, of New York, said that pernicious anemia is not due to gastric adynamia. There is no direct connection traceable either of cause or effect between these two conditions. There seems no doubt, however, that atrophy of the stomach wall does occur as a consequence of the poor blood that comes to it. Achylia gastrica, however, may exist with an excellent general condition and without any severe changes in the blood. Cases of it have been followed now for many years without any serious consequences being noted in other systems of the body.

Dr. Allen Jones, of Buffalo, said that it is a clinical fact that pernicious anemia is not caused by achylia gastrica. He has in his laboratory work seen much more achylia gastrica without pernicious anemia than with it.

Gastric Atrophy and Pernicious Anemia.—Dr. William Osler, of Baltimore, said that it was surprising how good the condition of patients may be who are suffering from pernicious anemia. They bear forced feed-

ing very well without any stomach distress, and the fatal issue is often surely not connected with any stomach lesion. On the other hand, stomach symptoms are a frequent accompaniment of pernicious anemia. The first symptom of the disease is often noticed in the stomach. There cannot help but be an impression that this organ is of importance in the production of pernicious anemia under certain circumstances. When very severe atrophy of the stomach exists, such as was described by Osler and Henry some years ago, then this would seem to be a cause of the blood condition. In this case described, the mucous membrane of the stomach had become cuticular. It had entirely lost the character of a secretory membrane. Dr. Osler said that he would be interested to know if observers of pernicious anemia found any connection between the disease and the septic condition of the mouth which had been described by certain English observers and reported as a cause of the disease. Dr. Osler himself has seen this spring so many cases of pernicious anemia as almost to constitute an epidemic of the disease. In all cases in recent years he has looked for oral sepsis, but has not found it in any notable proportion of cases and considers that it has little to do with the etiology of this type of anemia.

Diagnosis.—Dr. Osler does not consider that it is creditable to the diagnostic skill of physicians in this country that so many cases of pernicious anemia should be missed by ordinary physicians, leaving the recognition of the disease for the consultant. Laboratories are at hand now in nearly every part of the country and blood examinations can readily be obtained. There are surely enough symptoms in pernicious anemia, apart from the blood, to make at least a suspicion of its existence occur to the practitioner's mind. Too many physicians, however, are satisfied with general ideas, and the consequence is that cases of pernicious anemia masquerade as all sorts of affections.

Hydrochloric Acid Supplied.—Dr. J. N. Hall, of Colorado, said that in certain cases of pernicious anemia, in which arsenic failed to do good, he had tried the use of rather plentiful amounts of hydrochloric acid. The rationale of the administration of this is to make up for the absence of hydrochloric acid which is so commonly noted. In at least one recent case, in which everything else had failed, the patient became practically cured and has remained in good condition since. In one case where Fowler's solution failed to be of any service, Dr. Hall found subcutaneous injections of cacodylate of soda of excellent effect. The patient was a physician. The improvement took place several years ago and he has remained well ever since. Dr. Hall considers that in cases where the pernicious anemia may be suspected of being a secondary anemia due to the presence of intestinal parasites, the absence of eosinophile cells makes it very clear that the affection is not due to a parasite.

Large Doses of Hydrochloric Acid.—Dr. George Dock, of Ann Arbor, Mich., said that hydrochloric acid, fresh air, abundant diet, just as if one were treating the patient for tuberculosis, constitute, in his mind, the most effective regimen for pernicious anemia. Of course it is doubtful whether this accomplishes anything more than arsenic does, or whether the patients are really improved, for there are cases in which without any special therapeutic effort, pernicious anemia seems to get much better. The disease is very uncertain in these intervals of improvement. Dr. Dock considers that when hydrochloric acid is used, it should be administered in large doses. Forty-five to 60 minims should be taken well diluted after meals. When the drug is well borne, the patients improve under it. When it is not well borne, it is ineffective. Dr. Dock considered that the gastric digestion and its chemical tests should be controlled by

thorough examination of the stools. It is hard, however, to determine the relations between the feces and the ingesta, and this is a problem that remains to be worked out.

Gastric Atrophy and Pernicious Anemia.—Dr. Stockton, in closing the discussion, said that he feels his own conclusion with regard to the absence of connection between the gastric condition and pernicious anemia to be wrong if Dr. Osler insists on the etiological relationship. With Dr. Einhorn, however, Dr. Stockton prefers to consider the gastric condition an effect rather than a cause. He doubts about the success of any therapeutic effort for pernicious anemia and has seen about as many cases improve without arsenic as with it. The disease is entirely too uncertain in its course to be made a subject for any definite statistics as to therapeutic results.

Perforation in Typhoid Fever.—Dr. Morris Manges, of New York, reported 19 cases of perforation in typhoid fever out of the total of over 200 cases observed at Mt. Sinai Hospital during the last two years. Sixteen of these patients were operated upon and five of them recovered. Three of the patients were not operated upon for lack of consent to do the operation, and one of the three recovered. In all of the 16 operations the diagnosis was confirmed at the operation. There was no doubt at all of the perforation in the other three cases, in two of which it was observed at autopsy, and in the third demonstrated by a subsequent fistula. Dr. Manges considers that the present treatment of the subject of perforation in typhoid fever, in text-books is old fashioned and not likely to help the general practitioner to make the diagnosis early enough to enable the surgeon to save life. What needs to be diagnosed is the perforation itself and not the subsequent peritonitis, which is almost sure to be the forerunner of a fatal termination, if it has become generalized.

Symptoms of Perforation.—The most prominent symptom is pain which occurs in practically all cases unless the patient is in a comatose condition. Rigidity is the next most important symptom. In 16 of the patients there was an intermittent tendency to rigidity in two. Distention of the abdomen, often considered a common symptom, was found in a little more than half the patients, while eight of them presented even a retraction of the abdominal walls. The movable dullness, said to occur in the flanks in perforated patients, is not a valuable diagnostic aid and occurs too late to be of service for surgical intervention. It would be much more important for hospital physicians to occupy themselves with the size of the liver rather than to waste time in finding out whether the spleen is enlarged or not. The liver dullness should be determined in the axillary line, as there it is less likely to be encroached upon by the gaseous distention of the colon.

Critical Symptoms.—The pulse fell in none of the patients and rose in 12. In seven patients only was leucocytosis present and only in one patient were symptoms of collapse noted. Twice the patient began to sweat profusely immediately after the perforation. No disturbance of blood pressure was noticed in any of the cases, though during the past winter especially careful observations were made with regard to this point. It must not be forgotten that the onset of symptoms is by no means necessarily coincident with the perforation. As Dr. Shattuck, of Boston, has shown, there may be slight attacks of pain which pass off perhaps more or less and then are followed by definite symptoms after some hours.

Pain the Pathognomonic Symptom.—In 14 of the 19 patients studied, pain was noted. This was paroxysmal at times, but by no means in all. It was so severe that even patients in coma cried out at times, in others it

was quite mild. It is constant in some cases and in others it disappears after a time. If the patient is anxious about the outcome in a mild case, the symptom may be concealed. In one instance, at the Mt. Sinai Hospital, two patients side by side suffered from perforation. As soon as the first occurred, he was removed to the operating room and accordingly when pain came to the neighboring patient he refused to say anything about it. It is not easy to understand the significance of the pain. In some cases there is hemorrhage associated with it. In others this is not the case. There is danger in the use of opium lest it should mask the symptoms.

Spontaneous Cure.—The fact that one of the three patients who refused operation recovered, shows the possibility of spontaneous cure, which has, however, been pointed out by other observers before, and under the best possible conditions, however, only 5 per cent. of the patients recover spontaneously after perforation. Even these recover, however, with the unpleasant accompaniment of a fecal fistula. Thus it would seem an operation is not only justified, but eminently indicated. There need be no fear of the effect of the anesthetic. In Dr. Manges' cases, the anesthesia had proved a stimulant, and general anesthesia had been found much better in its effect upon the patient than local anesthesia with the shock and worry of it all. In concluding his paper, Dr. Manges said that Dr. Wilson, of Philadelphia, in 1886 and Dr. Mikulicz had pronounced very definitely in favor of operation for perforation. Now, after a score of years, their words are the best possible advice that can be given.

False Conservatism.—Dr. Osler said that he heard Dr. Wilson pronounce, nearly twenty years ago, in favor of operation for perforation in typhoid fever. He must have been older then than he is now, for at once a revulsive feeling of conservatism came over him. Fortunately, however, he was able to overcome it, and the result has been for the benefit of many patients. The only way to recognize perforation is to watch for the symptoms, and any possible change in them.

Dr. Osler said that any change in the condition of a typhoid patient must be reported at once. To leave such things until the daily rounds or at the mercy of any routine is almost sure to be fatal. Within ten minutes the patient should be under the physician's eye and the surgeon should be asked to cooperate if everything is not right. House surgeons should be ready to operate in such emergencies at night or where there is delay in reaching the attending surgeon. The last perforation at Johns Hopkins Hospital was in a stalwart German seen in the ordinary rounds at 11 A.M. At 12 M. there was a sudden attack of pain; by 3 P.M. he was operated on. This apparently had no effect on the regular course of his typhoid fever.

Operation for Hemorrhage.—Dr. J. C. Wilson, of Philadelphia, said that he hoped the time would come when operation would be done for threateningly fatal hemorrhage in typhoid just as it is now for perforation. Hemorrhage and perforation are not coincident in Dr. Wilson's experience, though it is not uncommon to have perforation follow severe hemorrhage. Pain as a sign of perforation is not absolutely to be depended on. Some cases of typhoid present severe pain sudden in onset, the effects of which pass off in a few hours without any sign of harmful result. The differentiation of these cases must give the medical man time to pause before determining upon surgical intervention without some other sign to confirm it.

Difficulty of Locating Bleeding Point.—Dr. Morris Manges, in closing the discussion, said that he hoped Dr. Wilson's recommendation as to hemorrhage would accomplish as much as had his announcement of the

policy to be followed after perforation. He would have to show the profession how to locate the bleeding point, however, for, as it is now with all the freedom of examination furnished by the opportunities of the dissecting table, it is often difficult to find the source of the hemorrhage.

Uterine Hemorrhage in Typhoid.—Dr. William E. Darnell, of Atlantic City, reported a case in which the fatal issue in an anomalous illness, during the course of which there had been but moderate fever, was brought about by severe uterine hemorrhage. No source for this could be found in the genital tract. Examination of the colon, however, showed the typically enlarged and ulcerous Peyer's patches, characteristic of typhoid. The question was then raised whether this might not be the causative agent in the hemorrhage.

Increase of Pneumonia.—Dr. Edward F. Wells, of Chicago, showed from statistics the great increase of pneumonia during the past century. About eight per cent. of all the deaths are now due to this affection. Far from decreasing, with our knowledge of infectious disease, it has multiplied in spite of knowledge. During the last decade of the nineteenth century it was probably three times as frequent as during the earlier decades. This is due partly to the greater virulence of the pneumococcus, but partly also to the more frequent opportunities for infection presented by great city life. Closer contact causes its spread, for it is undoubtedly a contagious disease in the strictest sense of the term. As the result of passing through a number of susceptible people the pneumococcus gains in virulence and thus is able to overcome the more or less immunity to it presented by many individuals. Dr. Wells has succeeded in demonstrating the pneumococcus to be present in the throat and nasal secretions of over forty-five per cent. of normal, healthy individuals out of over 100 examined. The organism plainly is taken up from the air and lodges here. Under the effect of cold the mucous membrane becomes paretic and so is not able to throw off the microbe. When it finds its way into the pulmonary alveoli, conditions become favorable for its growth. In a certain number of cases the pneumococci find an entrance into the lungs through the circulation. Hence the necessity for caring for conditions of tonsillitis as well as all catarrhal conditions of the nose and throat, which favor the lodgment of the germs. Honeycombed tonsils seem to present an avenue of entrance often available for the repeated attacks of pneumonia seen in some persons. Such mechanical and pathological conditions are much more important factors in the etiological predisposition of the disease than perhaps even the susceptibility of which so much has been made. Besides the virulence of pneumonia, Dr. Wells is confident that there is a definite increase of mortality from the disease, according to the number of cases. This also is due to the greater virulence acquired by the pneumococcus.

Prophylaxis.—Dr. Wells considers that the only way to lessen the present mortality and prevent even further increase of the disease is to avoid as far as possible the distribution of the secretion of patients suffering from the disease. The sputum and nasal secretions and all articles that become soiled with them must be thoroughly disinfected. This includes especially the fingers and the bedding of patients and requires the thorough disinfection of rooms in which such patients have been. The most important individual measure of prophylaxis is undoubtedly the avoidance of respiratory disease, for this predisposes the pulmonary mucous membrane to allow the lodgment of the pneumococcus. Dr. Wells considers that the blood pressure is an important element in pneumonia as regards both prognosis and course of the case. At the beginning there is always

a period of lowered blood pressure. Later this is not so common. This lowered blood pressure seems to Dr. Wells to be probably due or at least to be one of the elements of the physiological process by which leucocytes escape from the blood-making areas. It is now generally conceded that leucocytosis in pneumonia makes a distinctly favorable prognosis. Accordingly it would seem that this should be encouraged. In Dr. Wells' hands, the most efficient agent for the encouragement of leucocytosis with lowered blood pressure has been veratrum viride. This should be used in sufficient quantities to lower the pulse rate. If at the beginning of the case there is high blood pressure, bloodletting is of very great service.

Venesection in Pneumonia.—Dr. Jenkins, of Iowa, said that undoubtedly something of the frequency of pneumonia in recent years is due to the epidemic of influenza which has made many individuals more susceptible to respiratory disease than before. The treatment of pneumonia on the expectant plan has certainly not been satisfactory. The average mortality is higher than before. It would seem then that bloodletting should be reverted to once more, and that where the fever constitutes an important complication, this should be reduced by means of cold water.

Symptoms Not to be Treated.—Dr. De Lancey Rochester, of Buffalo, N. Y., said that it is an unfortunate thing to suggest treatment for symptoms, since it is the individual and the special form of pneumonia with its complications that must be treated. Poisons are already in the system, and it is important not to add to these by giving remedies that are also poisonous. Early bleeding should be resorted to in sthenic cases. Venesection is also of importance later on in the disease if there should be dilatation of the heart from weakness. Dr. Rochester does not believe in the use of opium in pneumonia, since it locks up the secretion, thus adding to the toxemia which is always a source of danger, besides it masks the symptoms, preventing the physician from realizing the danger the patient is in. One important method of elimination of toxins is sweating. This should not be brought about by the introduction of diaphoretic drugs, which are usually of depressant not to say poisonous nature. Hot foot-baths, properly given, without any disturbance of the patient, that is, while lying in bed, and hot air-baths, will be found quite efficient for this purpose, and will often be of distinct service in toxemic cases. Late pulmonary edema in this disease seems to be due to failure of the right auricle, and the first sign of it should be an indication for venesection.

Series of Pneumonia Cases.—Dr. Joseph Sailer, of Philadelphia, reported a series of 60 cases of croupous pneumonia, studied with special reference to certain physical signs and to the laboratory diagnosis with discussion of the value of leucocytosis and the quantity of estimation of the chlorides in the urine. Dr. Sailer noted particularly the frequency of pneumonia of the upper lobes in fatal cases. With regard to leucocytosis the conclusion reached was different to the general impression with regard to this phenomenon. Three of the patients that recovered had less than 10,000 leucocytes, ten had 10,000 to 20,000, five 20,000 to 30,000, five 30,000 to 40,000, and three over 40,000. On the other hand, four of the patients who died showed a leucocytosis of 20,000 to 30,000, one had over 30,000, and one of the thirty patients had nearly 50,000 leucocytes during the course of the disease. No definite conclusion then can be reached with regard to the significance of leucocytosis. Where leucocytosis is absent, fatalities ensue more frequently, but a high leucocyte count does not give a favorable prognosis. Any method of treatment, therefore, that would be

founded on this phenomena would not likely be of great advantage.

Urinary Chlorides.—The chlorides in the urine are not of prognostic value. When in the early course of the case the chlorides are absent, patients usually die, but they may be present and yet fatalities ensue. The presence of chlorides in pneumonia is very different from that of typhoid. They are always reduced in pneumonia while usually not disturbed at all in typhoid. This point can be used as a diagnostic factor in obscure cases of pneumonia. In this way a central pneumonia which gave no physical signs at any time, was recognized, and the diagnosis confirmed at autopsy. Icterus was noted three times in 60 cases, but seems to have no special connection with the pneumonia itself. Cyanosis was noted in severe form twice and was relieved once by venesection. Skoda's indeterminate breathing was noted in certain cases. It seems of diagnostic value.

Antipneumococcus Serum.—In ten cases antipneumococcus serum is employed and the results obtained are distinctly favorable. Four of the patients which recovered were so unfavorable in their prognosis that their recovery seemed marvelous. Three deaths took place. These were, however, in patients who would surely not have survived any form of treatment. One of them recovered from the pneumonia, but died shortly after from rapid tuberculosis. The results can be said to be fairly satisfactory, but further observations must be made to test the value of the serum.

Pulmonary Edema.—Dr. Babcock, of Chicago, said that the development of pulmonary edema in pneumonia patients after the crisis has passed, points to the failure of the right heart. Bacelli's suggestion, however, that the pneumococci may find lodgment in the walls of the alveoli must not be forgotten, for this seems to be the cause of the edematous condition. The blood pressure in pneumonia is low from the beginning, and this would seem to contraindicate the use of veratrum viride. The theory that lowered blood pressure helps leucocytosis is after all as yet unsubstantiated, and, besides, the value of leucocytosis itself as a feature of pneumonia is not determined. Stimulation seems more important than depression. Dr. Fränkel's method of employing digitalis hypodermically, beginning on the third day whenever there is no arterial sclerosis, must not be forgotten.

Mortality of Pneumonia.—Dr. R. C. Cabot, of Boston, said that the records of pneumonia which we have so far do not justify the thought that the disease is not more frequent than it used to be. This question must be studied more carefully. Certainly the records of the Boston City Hospital will not be found to substantiate the claims of exaggerated mortality now so common.

Dr. Cohen, of Philadelphia, said that the most important element in pneumonia treatment is to individualize therapeutic effort. In some cases venesection is of use to reduce the toxemia at the beginning. In others, it is of value to relieve the overloaded right heart. In neither of these cases does it seem advisable to inject saline solution afterward. High temperatures, in Dr. Cohen's experience, seem rather favorable than otherwise. The temperature seems to be an index of the vital reaction, and the patient with 104° F. is much more likely to get better than those running lower temperatures. Veratrum viride undoubtedly does good in many cases of pneumonia, but it is not because it is a heart depressant.

Shock of Pneumonia.—Dr. Wells, in closing the discussion, said that at first there is undoubtedly a reduction of arterial tension in pneumonia. This seems to be a protective reaction on nature's part. It is desirable to maintain it as far as possible. Veratrum viride by accomplishing this protects the patient from the shock of the disease. Dr. Wells does not want to

be misunderstood with regard to the use of opium. When patients are very restless and tossing, opium is employed to quiet them. This prevents them from being harmed by their restlessness. When the blood pressure in pneumonia goes up, the prognosis is decidedly unfavorable.

Serum Intravenously.—Dr. Sailer, in closing the discussion, said that undoubtedly serum may be obtained that will be efficient in pneumonia. His idea is that perhaps it should be injected intravenously so as to reach the lungs less diluted than with the present method of injecting simply under the skin. He expects then to make use of this method in some further cases.

SECOND DAY—JUNE 8TH.

SYMPOSIUM ON ARTERIOSCLEROSIS.

Pathology of Arteriosclerosis.—Dr. William H. Welch, of Baltimore, dwelt on the fact that enormous atheroma of arteries may be present without any heart disease or even hypertrophy and without any rise of arterial tension. At the same time, there may be none of the usual symptoms of sclerosis. The question is whether the rise in blood pressure precedes arterial sclerosis and causes it or whether it is the consequence of elasticity in the arteries. Traube and Pepper insisted that there was some element present in the circulation which first causes the rise in blood pressure. For the determination of this, it is positively necessary to eliminate all cases of Bright's disease in which, of course, high pressure is present as the result of faulty elimination of the used up material. Dr. Welch suggested that the theory formulated by the Leipzig school of pathology which considers that the circulation in the abdominal viscera is the first and the most important question in the production of arteriosclerosis. Sclerotic changes in the kidney and liver are particularly important in this respect. When, however, the course of the arteries does not show any thickening, the mouths of the vessels in the abdomen may show distinct constriction. This has been to a very limited degree the subject of detailed observation; studies in arteriosclerosis are incomplete and especially do not take in these vessels.

Syphilitic Aortitis.—Syphilis is, in Dr. Welch's opinion, a very prominent cause of changes in the aorta and of atheromatous conditions in other arteries throughout the body. When such changes are present, the direct effect of the syphilis can be traced, and this etiological factor should always be given due consideration. Especially is this important from a therapeutic standpoint, as there is more hope from remedial measures. Dr. Welch believes that the effects from local areas of arterial sclerosis may help in understanding the general process. In a kidney recently obtained at autopsy, there was a double blood supply, one artery going to the upper, the other to the lower part of the kidney. One of these arteries showed marked sclerotic changes. The part of the kidney supplied by this showed typically the granular, wrinkled appearance with marked interstitial changes. The other part of the kidney was practically normal without any degenerative appearance.

Arteriosclerosis and Infectious Disease.—Dr. W. S. Thayer, of Baltimore, said that his attention was especially called to the effect of infectious disease in production of arteriosclerosis by observations made on typhoid fever patients. Nearly one-half of the sufferers from typhoid fever during their convalescence and afterward, showed palpable radial arteries. Sometimes these have only been recognized years after the attack of typhoid fever. Sufferers from other diseases

showed the same condition in only about 17 per cent. of the cases. In the autopsy records over one-half the cases of typhoid fever showed aortic changes, many of them of recent origin. Cases of coronary disease were also found. In four cases yellow degeneration of the intima of the heart was noted. These are evidently factors that would enter into the production of arteriosclerosis. In typhoid fever, the blood pressure is higher than normal, and as this continues for weeks there is a definite tendency to the production of degeneration of arteries. If typhoid fever is so prominent, other infectious diseases are also likely to exercise a similar influence, so special studies were made in order to determine this.

Statistics in 4,000 Cases.—An analysis of 4,000 histories very carefully taken by fourth-year students at Johns Hopkins Medical School shows that hard work is the most important factor in the production of arteriosclerosis, both as regards the number of cases and the youth of the patients suffering from the affection. After hard work comes the abuse of alcohol. After alcohol, the infectious diseases by the changes which they produce in arteries, give a basis for sclerotic arterial degeneration. Among the infectious diseases, the most important is rheumatism and next after this comes typhoid fever. Scarlet fever also has a definite effect in this direction.

Syphilis and Arteriosclerosis.—Dr. C. Travis Drennen, of Hot Springs, Ark., said that undoubtedly there is a connection between arteriosclerosis and syphilis, but whether syphilis is a direct cause or not cannot be said as yet to be absolutely determined. Dr. Drennen believes that the routine methods of treating syphilis by mercury have been responsible to some extent for the production of arterial sclerosis. The toxins of syphilis act upon the arteries, but so also does mercury, as any other metallic poison that may happen to be present in the system. At a time then, when the presence of syphilis is already causing irritative changes in the arteries, the abuse of mercury is likely to be especially serious. Every physician must have the experience of having patients come into this office who announce that for years on their own responsibility they have been taking without intermission a certain amount of mercury. It would seem then that individualization of the treatment of syphilis is extremely important, lest more harm than good be done.

Arteriosclerosis and Nephritis.—Dr. George Dock, of Ann Arbor, Mich., said that formerly it was the custom to attribute arterial sclerosis to nephritis as the cause. Now, there has come the definite doctrine, more and more widely accepted, that arteriosclerosis may affect the kidney before any inflammatory changes are found in that organ. The lesion of the blood vessels would seem to be a result of a primary set of changes. Undoubtedly infectious diseases produce an effect upon the kidney which may subsequently lead to degeneration of the arteries first within the organs, and later outside. Just what causes arteriosclerosis we do not know and there is an assumption of knowledge in his matter that is to be deprecated. At the present time the studies in blood pressure promise to be of more service than any other form of observation. Undoubtedly hypertension is the most important causative factor of the condition.

Lead and Arteriosclerosis.—Dr. Frank Billings, of Chicago, said that lead poisoning is much more common than is usually thought and in certain of its latent forms may readily escape notice. The metal very readily gains an entrance into the system. Its almost universal use in the arts gives rise to frequent opportunities. A recent case seen at Cook County Hospital il-

illustrates how small an opportunity may be present for absorption of lead and yet lead poisoning ensue. The patient was a laborer in the stock yards who came suffering from typical lead palsy with drop wrist. There seemed to be no possible reason in his occupation for this poisoning. Very careful inquiry, however, elicited the fact that he handled bars of solder. This was absolutely the only lead with which he came in contact, yet it proved sufficient to give him lead poisoning. A second typical case was that of a woman who presented, besides other signs of lead poisoning, the characteristic blue line on the gums. Her husband was a painter, and her only connection with lead was in the washing of her husband's clothes. Shoemakers have been known to acquire lead poisoning as the result of keeping the tin tacks sometimes used in shoes in their mouths. Cigarmakers, who are susceptible, have been known to receive their lead poisoning as a result of rolling the cigars on tin plates. Diamond cutters acquire the disease because precious stones are imbedded in lead when about to be cut, and the slight amount of the metal which thus gets on their hands proves sufficient to produce lead poisoning. In some people, even the slightest handling of the metal soon produces toxic symptoms.

Degenerations.—There is now a well marked degeneration of red cells which is believed to be due to the presence of lead in the system. The red cells have also been found to be carriers of the metal. Whether it is through them that the arteries are affected or because the nervous system early comes under the influence of the metal and causes the rise of blood pressure is not known. The characteristic lesion of the arteries is a proliferative change with hyaline degeneration in patches. This leads ultimately to a thickening of the media with degeneration of the muscular coat. The changes are noted especially in the blood vessels of the abdomen and in the heart, lungs, liver and kidney. The kidney is the most affected organ. There is first a parenchymatous nephritis which is followed later by contraction with interstitial change. The diagnosis of lead poisoning and arteriosclerosis therefrom can only be made by exclusion. It may be said at once that the acute symptoms of lead poisoning, the blue line on the gums and the drop-wrist, are not important for the diagnosis of arteriosclerosis since this is a chronic change, and the acute symptoms often lead to the early abandonment of the occupation in which the lead finds its entrance into the system.

Alcoholism and Arteriosclerosis.—Dr. Richard C. Cabot, of Boston, said that there is a universal consensus in literature that alcohol is the most prominent factor in the production of arteriosclerosis. All the text-books of general medicine, and especially the text-books on heart and arterial disease agree in this, yet there are some skeptics. The two important questions are: What is alcoholism, and what is arteriosclerosis? As regards the latter question, Dr. Cabot believes that all cases should be excluded in which the radial artery is merely palpable, but not tortuous nor stiffened. At the Massachusetts General Hospital, a number of autopsies on patients with palpable arteries in Dr. Wright's hands did not show the presence of any changes that could be called arteriosclerosis. Alcoholism will surely be considered to be present in extreme cases where patients for long years have taken large amounts of intoxicating material. At various institutions in the State of Massachusetts where chronic alcoholics are taken, Dr. Cabot has secured the results of autopsies. Many of these individuals have taken a quart of liquor a day or confessed to forty whiskies with as many "chasers." There is no doubt of alcoholism in these

cases. About fifty were excluded because of the evident presence of syphilis. In only 18 out of nearly 300 cases, that is in about 6 per cent., was there arteriosclerosis of the peripheral vessels. Of course, all patients were excluded who were over fifty years of age. If, besides the patients over forty years of age were excluded, there were only four cases or only 2 per cent. of arteriosclerosis in confessed alcoholic cases.

Arteriosclerosis Under Forty-five Years.—In what may be considered premature degeneration of arteries, that is, in men under forty-five years, Dr. Cabot had the opportunity to study 45 cases. In only six of these was there a history of alcoholism. Out of 132 autopsies at the Massachusetts General Hospital, due to arteriosclerosis, 19 cases were in patients under fifty years. Two of these were manifestly syphilitic. Of the remaining 17, only two had a history of alcoholism. In a patient who for ten years had been known to take whisky very liberally, so that a quart a day seemed a small amount, and his family thought that for ten years he had taken this much, no arteriosclerotic changes could be found. Arteriosclerosis seems to be the result of prolonged mental or physical strain much more than to the abuse of alcohol.

(To be Continued.)

SECTION ON SURGERY AND ANATOMY.

FIRST DAY—JUNE 7TH.

The Chairman's address was delivered by Dr. Charles A. Powers, of Denver. It was a forecast of the future as well as a retrospect of the past. He said that two, or at best three centuries ago a man who removed another's viscera and disposed of diseased areas and returned them thus curing the patient, would have done well had he escaped death at the stake.

Growing Importance of Surgery.—This branch of medicine with its many dependent departments has become the most astute science in the world. It calls therefore for the employment of the keenest intellects among our young men and women. This has only recently come to pass. Indeed, it dates from the dawn of the antiseptic era. Prior to that, however, a great deal of magnificent work was done and the surgeon of to-day should not fail to consult old authors who spent a great deal of time and thought in establishing differential diagnosis, which to-day, because of the decreased danger of exploratory incisions, are, it is to be regretted, not so keenly studied as they should be.

Gradual Development and Rise of Surgery.—A century ago the ablest men went into the priesthood. In time the law received an equal proportion of this element. In most recent days medicine is claiming her share, the priesthood is receiving a poorer element; the brains of the country are pretty evenly divided between the lawyer and the physician.

Personal Characteristics of the Surgeon.—Destined to carry responsibilities far greater than those of any other individual, the surgeon must be a man of the very finest mold, both mentally and morally. He must be a man of power and influence. His judicial, as well as his scientific abilities must be cultivated, for he is called to judge cases when life hangs in the balance. The surgeon and the scientific man of medicine are receiving at length their proper recognition. The great captains of industry are beginning to understand what a debt of gratitude the community owes the surgeon, and as a result they are establishing institutes which shall enable the prophylaxis of the public health and other problems of a like nature to be thoroughly worked out in the near future.

Danger in Moles and Warts.—Dr. W. W. Keen, of Philadelphia, gave the histories of 19 of these cases

which had come under his personal observation, and cited six others. He said that it must be understood that a very small percentage of moles, warts and nevi actually undergo malignant change, but on account of our present ignorance of these matters we are unable to forecast their future. Whoever has a scab upon him, will rub that scab off. Thus the patient is often to blame for the production of malignancy because continued traumata lead to malignancy. Any tumor which is constantly irritated is prone to become malignant. A certain sign of malignancy is increase in size. It is held by some pathologists that these three types of tumors degenerate invariably into epitheliomata. This, however, is not true, for sarcomatosis is not uncommon, especially in the case of pigmented moles. The only rational and safe treatment for these cases is early and complete ablation with the knife. It should be done during the harmless stage quite irrespective of the position in which the growth may be. He said he could not urge too strongly upon the profession the necessity of teaching the laity the importance of this sadly neglected subject.

In discussing Dr. Keen's paper Dr. W. L. Rodman, of Philadelphia, said that these lesions were fraught with the utmost danger to human life. The importance of disseminating this knowledge throughout the land could not be overestimated. He said that pigmented moles are the tumors which result in sarcomatosis while the other forms develop into epitheliomata.

Dr. Gustav Fütterer, of Chicago, described a form of epithelial metaplasia, examples of which he had seen in the stomachs of some of the lower mammalia, particularly in those in which the teeth being absent the stomach is obliged to do a very great deal of work in digesting, and as a result suffered more or less frequent traumatism.

Dr. Robert F. Weir, of New York, said that moles, nevi and warts should be looked upon as tumors. He advised the use of monochloroacetic acid, stating that patients will often submit to the use of this when they will positively refuse to allow the surgeon to remove the growth with a knife.

Dr. A. D. Bevan, of Chicago, said that there was a possibility that the actual removal of the growth might be the cause not alone of disseminating malignant cells if they had developed at the time of operation, but also possibly drop the balance in certain cases in favor of malignant degeneration. The Paquelin cautery should be applied to every suspicious case which should afterwards be removed with the knife. Large numbers of people, however, are blessed with a multiplicity of moles or even warts. It is therefore not always practical, if indeed it be wise, to remove them without careful consideration.

Dr. Keen, in closing, said that he had urged the removal of these tumors in as pressing a manner as he did because their danger had been brought home to him by the untimely death of a number of close friends through this preventable cause. He did not deny that common sense must dictate in this as in all other things the treatment of these cutaneous lesions, but the knowledge of their potential danger could not be too broadly known.

Starvation for Malignant Growths.—Dr. R. H. M. Dawbarn, of New York, gave a brief description of the technic of external carotid extirpation. He cited the character and the number of the anastomosis about the face and within the brain and dilated upon the bearing of these anatomical points on the operation of starving the growth. His 60 cases have shown that in the absence of complications a 5 per cent. mortality is to be expected.

Success is to be expected in sarcoma, which, as is well

known, spreads by the blood vessels whereas carcinoma spreads by the lymph channels. He spoke of the desirability of tying the inferior dental and mylohyoid artery and resecting the mylohyoid nerve; this latter technic being employed as a safeguard against pain in case of recurrence. Surgeons who propose doing this operation must study the variations in the vessels of the neck and an exploratory incision should always be done to determine whether the internal carotid may not have taken, as it occasionally does, the part of the external carotid and give off important but irregular branches.

Use of Paraffin Injection.—This material combined with vaseline and introduced at a temperature of 120° F. is a convenient medium for stopping the terminal branches of the external carotid. The occipital instead of these branches, should occasionally be plugged but never both. Decision on this point is reached by considering the position of the tumor.

Dr. A. T. Bristow, of Brooklyn, said that he had performed the operation 11 times on six patients. Five were epitheliomata, the other a sarcoma. The immediate result of the operation was to relieve pain and to stop all discharge. This naturally does away with the morphine habit of which the sufferers are usually the victims. It also, even in carcinoma, causes immediate shrinkage of the growth. None of his cases had lived over a year, but they had survived in comfort and died in peace.

Dr. Dawbarn, in closing, said that Dr. Da Costa considered the operation of very great use as a possible means of bringing inoperable cases to the operating table for complete removal. It had been his good fortune to have such a case, and the man was now apparently cured.

Tumors of the Breast After the Menopause.—Dr. J. C. Stewart, of Minneapolis, said that transition of cysto-adenomata to malignant growths was not uncommon. He could therefore not understand how a prominent surgeon had recently recommended that general practitioners should aspirate all these cysts. That there is the very greatest danger of establishing general carcinomatosis by any form of unguarded exploratory incision or puncture, there can be no doubt. In women over forty years the breast is useless, and inasmuch as direct incision is dangerous, the easiest means of making what may be called an indirect exploration is to place an incision in the line which can be used for complete removal, and then to clamp all lymphatics and blood supply. He concluded that tumors of the breast should be regarded malignant until they are proven to be benign.

Dr. William Jepson, of Denver, said that we knew very little of the differential diagnosis of those growths on the borderland between the good and the bad. Cyst formation does not give prognostic indications of any value. Eighty-two per cent. of all tumors of the breast are carcinomata. A small percentage are sarcomata. Less than 10 per cent. are benign. In view of these figures, is differential diagnosis necessary?

Dr. J. C. Bloodgood, of Baltimore, stated that the proportion of malignant growths operated on is decreasing in favor of the benign forms. The reason for this is that more tumors are operated on than formerly. At least 33 per cent. of all tumors are benign. It is interesting where this factor of diminished malignancy, brought about by early operation, will bring us as time goes on. The laity must be instructed that all breast tumors are malignant and should be removed. He concluded that the only type of tumors which do not call for removal are multiple growths in patients under thirty years. In 28 cases of doubtful type in which exploratory incision was practised, but three patients have died.

Dr. Stewart, in closing, said that the conclusion of the matter was that the microscopical examination of a

tumor is sufficient. The question of the character of the exploratory incision is shown by Dr. Bloodgood's observations to be merely of academic interest.

Pathology of the Knee-joint.—Dr. A. Hoffa, of Berlin, Germany, said that papillomatosis has nothing to do with tuberculosis. He described a form of lipofibromata, a large number of which he has removed from joints. In the first case, he operated for what he thought was a displaced cartilage. A section of these fatty tumors shows a reticulum filled with endothelial cells and small amounts of fat. They are but slightly vascular. This tissue is apt to grow after moderate trauma of the joint and hemorrhages into the tumors may cause them to simulate floating cartilage very closely.

Surgical Lesions of the Axillary Plexus.—Dr. John A. Wyeth, of New York, reported a case in which no nerve trunks have been severed but in which a total paralysis of sensation and motion resulted from pressure. Section of the axilla had been made and the arm was hyperextended. He cited five cases of neuromata of the axilla and suggested that in the event of the surgeon being unable to remove them, an admirable technic might be to sever the clavicle, as he had done on one occasion, allowing it to unite with an upward angle so as to give the part more room. In his case the patient was granted three years of comfort by this method.

Dr. J. B. Murphy, of Chicago, said that the position of the arm during operation is most important. Fortunately musculospinal paralysis which is caused by allowing the arm to hang over the side of the table is rare. These paralyses, he said, are not always curable.

Matas' Operation for Popliteal Aneurism.—Dr. J. F. Binnie, of Kansas City, said that this excellent technic could be used for fusiform or for sacculated aneurisms. He described the technic which he had used and reported the case in full. It was one showing marked atheroma and the aneurism measured six by four inches. Although the case suppurated, it went on to an admirable recovery.

Dr. R. Matas, of New Orleans, said that the technic was easy and that its elastic pliability made it more valuable than a positively fixed method. The points which he considered important were: Free exposure of sac, early control of all vascular openings of sac. Tier suture obliterating the walls. Restoration of lumen is often possible. Dr. Matas reported histories of six cases. This, he said, was not a large number, but the occasion for using the technic does not often occur. It is most fortunate, in the opinion of Matas, that a wide attention is being given to the operation, because it seems unquestionably to be a life-giving one.

Dr. J. B. Murphy, of Chicago, described a fatal case in which he had endeavored with apparent success to use a modification of Mayo's flap method of closing the sac. He regards infection in and about blood vessels as more dangerous than occurring anywhere else.

SECOND DAY—JUNE 8TH.

Twine in Lieu of the Elastic Ligature for Performing Gastro-enterostomy.—Dr. J. W. Draper Maury, of New York, reviewed the history of the experimental work which has recently been done at the surgical laboratory of Columbia University, and described the evolution of a twine triangular stitch. He said that it was a modification of McGraw's method, but that by the use of twine instead of elastic the technic was made available for all occasions in which it might be suitably employed. The elastic, he said, as is well known, is prone to degenerate from contact with the air. Twine is to be had anywhere, the ordinary commercial white grade too strong to be broken by the hands, serving the purpose admirably. He had brought to the meet-

ing and demonstrated thirteen specimens of dogs' stomach and intestines which had been perforated by the twine. Two of these were recent, having been removed but a day or so ago, and they had been cut out in something less than 3½ days. He described the technic of introducing the ligature and gave a practical demonstration of it before the section.

Remarks on the Disadvantages of the Murphy Button.—Dr. Robert F. Weir, of New York, first paid a very graceful tribute to the originator of this device which, he said, had more than any other contributed to the development of the subject of abdominal surgery. One of the advantages claimed for the button consisted in the rapidity of its introduction. A wide experience has, however, proven that safety sutures are indispensable. This therefore diminishes the advantage and places the mechanism in the category of other well known technics. A disadvantage of the instrument has always been and will continue to be that makers refuse to follow the explicit directions of Murphy. Unless these be most faithfully executed, there is certain to be grave danger for the patient and disappointment for the surgeon. Weir has done gastro-enterostomy with the button seventy times. He perfected a flange, to prevent it from falling into the stomach, but in the one case in which this accident befell him it proved to be the button with the flange. On the last thirty patients he has performed entero-enterostomy, and this has done away with the vicious cycle. He said that a further disadvantage with the button lay in the fact that 58 per cent. of them are not recovered, they either remaining in a fold of the colon or else being passed and lost. He said that in future he would perform gastro-enterostomy either by the Weir-Maury method of using a triangularly inserted twine, or by employing a technic which he has recently used in five cases. This consists in tying the entero-enterostomy button with a stout silk linen fish line under no tension to the entero-enterostomy button above. A small bit of twine is left to hang down into the gut from the entero-enterostomy to serve as an excitant for peristalsis. The results have been most encouraging.

Excision of the Ulcer Bearing Area in Gastric Ulcer.—Dr. W. L. Rodman, of Philadelphia, said that this technic could not be employed in any but chosen cases. In a certain proportion of gastric lesions, however, it was obviously the only surgical procedure. He described in full the technic of his method of pyloroplasty which includes the use of the Doyen clamp and the removal of the first portion of the duodenum. He said that 25 per cent. to 50 per cent. of all cases were healed by medical means. Those which are most apt to come to the surgeon are of the type found in the male who is past forty years of age. Gastro-enterostomy has failed in at least six per cent. of cases to control hemorrhage from an acute ulcer. Furthermore, it does not remove the cicatrix of the old wound, which, as is well known, is very prone to undergo degeneration.

Necessity of Drainage.—This is a *sine qua non* here more to be urged perhaps in this operation than in any other on the stomach, because of its eliminating all danger of malignant degeneration. Duodenal ulcers usually accompany or are accompanied by ulcers of the stomach. Ulcers usually are multiple contrary to the old teaching, and it is not uncommon that they occur directly on opposite surfaces of the stomach, one evidently having produced the other.

Dr. A. J. Ochsner, of Chicago, reported the histories of 86 patients on whom he had recently operated by the McGraw technic. Three of these had died, but they might fairly be considered inoperable cases. They certainly were patients upon whom he never would have even considered operation with any other technic. He

had done the operation of cholecystenterostomy upon one patient and stated that the technic was far from satisfactory for this operation. The difference in density between the two viscera prevents satisfactory manipulation. Absence of shock was very marked and is probably to be explained by the fact that there is so little manipulation. This factor undoubtedly serves also to explain much of the success of the Murphy button.

Dr. William J. Mayo expressed himself as delighted with Weir's method of tying the buttons together. He asked what would be the result if the pull of the lower button proved inadequate and the gastric button fell into the stomach? Truly there would then be a dilemma, for the string would straddle the fistula. He advised the suture operation on the posterior surface of the stomach, saying that it could be done in from 12 to 17 minutes. He felt assured that Rodman's operation is based on ideal surgical principles, but felt equally certain that it could not be carried out in all cases. Pylorotomy and partial resection of the duodenum was, in his opinion, a fairly formidable operation to suggest for the cure of an ulcerated stomach. He reiterated his belief that the vicious cycle is due to particles of food being driven out into the loop through the patent pylorus by the muscular action of the stomach.

Dr. J. B. Murphy said that the button had many more defects than had been enumerated by Dr. Weir. He admitted freely that it occasionally fell into the stomach, one of the buttons modified by Weir having disappointed him in this way at a recent date. He agreed with Dr. Ochsner that there must be the least possible manipulation of the viscera. He pointed out a very important anatomical relation. When endeavoring to place an anastomosis at the lowest point of the stomach, it must be borne in mind that the organ when dilatation begins is pressed down from above so that the cardia may often be seen one inch below the pylorus. If account of this be not taken at the time of operation, the opening will be made at a point too far to the left, and when on account of drainage, the stomach resumes its normal position, which it will, the opening is found to be too near the cardia. He said that in his opinion, Mayo was absolutely right in contending that the pylorus of each one of the cases of gastro-enterostomy should be permanently sealed, but he had not as yet found any satisfactory method for effecting this.

Dr. R. H. M. Dawbarn stated that he had for years been in the habit of using a cork instead of a faucet as a means of handling the buttons. This plug serves a double purpose in that, first, it blocks the canal and prevents possible contamination, and second, if the button should happen to drop back into the gut, as it sometimes does, the shape of the cork will not allow it to actually enter the viscus.

Gastro-enterostomy by Crushing.—Dr. L. L. McArthur, of Chicago, showed two very interesting specimens. They represented attempts to effect gastro-enterostomy by means of crushing opposing areas of the viscera and then joining them together with Lembert stitches. Finding that this technic failed, no matter how entirely crushed the gut might be, he had endeavored to complete the necrosis by tying off the blood supply with a purse string suture. This had also failed. He wished these attempts registered in order that they might prevent other experimenters from wasting time in like endeavors. One of his specimens showed very beautifully that the Lembert stitches which are placed on the outer surface of the gut eventually pass through and are extruded into the lumen.

Dr. A. A. Berg, of New York, said that due credit

ought to be given in all this work to Gaston who had originally devised the technic.

Dr. S. Lloyd, of New York, criticized the twine freely. He said that if the elastic be known to work well, why look for a substitute? He stated further that the elastic begins to cut through before the twine and that the elastic is much the more readily sterilized.

Dr. W. L. Rodman, of Philadelphia, in closing said in answer to the criticism that pylorotomy was too severe an operation for the relief of ulcer and that the mortality was 30 per cent., and further that it took an undue amount of time to accomplish the technic; that the mortality in his opinion did not exceed 10 per cent. in suitably chosen cases; that the work could be done within a reasonably short time and that the great advantage of the operation lay in the fact that after it there could be no chance of malignant degeneration. No man, he said, however skilful could possibly say on inspection whether a given tumor situated in the stomach, the patient presenting which had given a history of ulcer, was or was not malignant. Medical history was full of cases which had been operated on by such men as Keen in which the patient had, after a most lamentable prognosis gone on to a speedy and permanent recovery.

Dr. Maury, in closing, said that he was not aware that Dr. Lloyd was in possession of data bearing on the relative rate at which the twine and the ligature would begin to cut their respective fistulae. Furthermore, that he had not heard of twine being injured by boiling and that its sterilization was as easy, if not simpler, than that of the elastic. In answer to the remark that twine had been discussed as a substitute for the elastic at the New York Academy of Medicine during the past winter, he called attention to the fact that he suggested the use of twine for this purpose in a communication in the *MEDICAL NEWS* of September 12, 1903, which antedated the meetings of the Academy. In discussing Dr. Ochsner's use of the ligature to produce an opening after he had resected the greater portion of the stomach and closed the small remnant of the viscus, Dr. Maury said that it was interesting to observe that if the pylorus in dogs were sealed and the stitch put in at the same time, the dogs would die within thirty-six hours, of symptoms resembling tetany. Whether the human being was less liable to this toxemia or whether Dr. Ochsner's success was due to the fact that he had removed a large portion of the stomach which is thought to secrete the toxic substances, was difficult to say.

Rupture of Mesenteric Glands During Typhoid Simulating Intestinal Perforation.—Dr. R. G. Le Conte, of Philadelphia, said that this complication is a rare one. There are from 130 to 250 glands in the ileum. These are divided into three distinct groups, the second group, which is located at the mesentery is the one involved in this discussion. The lesion is a diffuse one and seemingly has no bearing of a direct nature on the typhoid germ. The pathological etiology is most obscure. He concluded that whatever the cause, there are always enlargement and softening. When this process extends to the blood supply of the glandular capsule, there are apt to be a destruction of this membrane and pouring out of infection into the peritoneal cavity. Although 600 cases of typhoid are treated annually at the Pennsylvania Hospital, this is the first case to be reported from that institution. If the source of infection does not come from the lumen of the gut, it seems most likely to take its origin in endothelial proliferation followed perhaps by thrombosis of the blood supply or by actual infection of the gland by the ordinary pus-producing bacteria.

Intestinal Anastomosis by a New Method.—Dr. J. S. Horsley, of Richmond, Va., described in a beautifully illustrated article a method of intestinal anastomosis which he believed to have certain points of unusual merit. The technic is of the through and through variety and was shown to be simple and efficacious by a study of the charts. He cited a fatal case and exhibited a specimen of perfect union which had been obtained at the autopsy.

Dr. Connell endorsed this suture because it was of the through and through variety. He said that no other form of stitch could have the strength of this type.

Retroperitoneal Myxolipoma.—Dr. George Ben Johnson, of Richmond, Va., said that these little known tumors were divided into three classes, (1) perirenal; (2) doubtful; (3) mesenteric. There are 48 cases in the literature. These tumors are 30 per cent. more common in women than in men. Further than this nothing is known as to their cause. The diagnosis is almost impossible because of their cystic character. A pathological report of the tumor was read.

Drainage of the Biliary Tract.—Dr. Maurice H. Richardson, of Boston, said that he regarded immediate closure of a biliary wound as absolutely contraindicated. Fistula operations are extremely dangerous. Stones are often found in the course of operations for other conditions, the existence of which has never been suspected. Very many inexplicable and unusual symptoms may be safely ascribed to gall-stones. He concluded (1) That stones when they are known to exist, if local conditions are not unfavorable, should be removed at once whether causing symptoms or not. (2) Drainage should be maintained until the bile ceases to flow. (3) An incision similar to the "gridiron" for appendicitis should be used in these operations. (4) A permanent fistula usually means an overlooked stone in the common duct.

Gall-stones in the Common Duct.—Archibald MacLaren, of St. Paul, said that gall-stones are usually to be found associated with chronic lesions of the mucous membrane of the gall-bladder. Since the mid part of the duct is the most readily dilated, stones naturally find lodgment there. In one to five or one to seven of all cases of cholelithiasis stones are lodged in the common duct. Surgically considered the gall-bladder very closely resembles the appendix and this is one reason for treating these two organs similarly. All stones should be taken out as soon as they are diagnosed because nothing is known or can be foretold of the future of the stone.

Dr. J. D. Bryant, of New York, agreed in the full detail with Dr. Richardson, particularly as to drainage. He said that the proliferative changes in the mucous membrane of the bile ducts must block them and that all effort should be made to take away the chance of any pressure existing in addition to the factor already mentioned.

Dr. W. J. Mayo said that the time was approaching when the general practitioner would be as eager to have gall-stones operated on early, now that his training is complete, as he is to have an appendix taken out. He said that there were certain definite indications for cholecystectomy, viz., in an already obliterated organ and in certain mild forms of cholecystitis, when nature has already indicated the non-usefulness of the organ.

Appendicitis in Children.—Dr. A. J. McCosh, of New York, said that the disease in children differs very widely and in certain various specific details from its characteristic appearance in adults. One has practically to depend for diagnosis in children upon the occurrence

of persistent vomiting in the absence of food. Pain, because of the characteristic vagaries of a child, is of little or no value. The leucocyte count has been stated on very high authority to be valueless in the diagnosis of appendicitis in children. The differential diagnosis has to be made from gastro-enteritis, from basal pneumonia, and from diaphragmatic pleurisy. The author stated unconditionally that upon the testimony of persistent vomiting alone in suitably chosen cases, diagnosis for appendicitis could be reached, the symptom alone being enough to justify immediate operation. He gave a large number of statistics showing the frequency of appendicitis in children, basing his statistics upon his last thousand cases. Over 50 per cent. had occurred between the ages of 20 and 35 years, after which period the occurrence of appendicitis becomes rapidly less. Before ten years of age 7 per cent. of his patients had had appendicitis, while his youngest patient had been a babe of twelve months.

Diagnosis of Appendicitis.—Should the appendix be removed as a side issue? was discussed by Dr. F. W. McRae, of Atlanta, who based his query upon 270 cases. Twenty-five per cent. of these had been marked by obscure conditions which had a more or less direct bearing upon his mortality statistics. Endeavoring, however, to give suitable weight to this factor, he had reached the conclusion that in uncomplicated cases it was the part of wisdom to remove the appendix irrespective of its condition. This was based partly upon the ease and apparent freedom from danger of the operation, and partly upon the fact that it is almost impossible to recognize a diseased appendix with the naked eye while it is quiescent. He devoted considerable attention to a consideration of the controversy as to whether the bound down and adherent appendix should be left alone or should be excised. He said that a failure to remove the appendix is frequently followed by a necessity to excise it shortly after; this brings pain to the patient and discredit to the operator. Removal advised when operating for floating kidney, for gall-bladder and rectal troubles.

Factors in the Mortality of Appendicitis.—Dr. J. B. Deaver, of Philadelphia, said that the palpating hand of the surgeon should be the only agent used in determining whether or not to operate in a given case of appendicitis. He said that there were three causes of delay. The first was brought about by the period of latency of the disease. The second by the delay of the patient in calling his physician, and third by the delay of the physician himself in establishing a diagnosis and operating. He spoke of the appalling danger of using opiates for any form of bellyache, especially in children. He lamented that much of the old time delicacy of touch and interpretation of obscure conditions had been lost by the introduction of mechanical and laboratory means of reaching diagnosis. He reiterated the well-known belief that leucocytosis is utterly useless because, with its establishment in too many cases, the time for operation is past. Pus cases are protected by nature in three ways, by adhesions and by specific protective bodies and by dilution. Adhesions are often of limited value as a means of walling off infection and frequently fail to limit its spread. The development of antitoxins was little recognized though potent. A dilution of the infection by serum which results directly from the inflammatory reaction is an important protective mechanism. He stated that in his belief much could be learned from observing the condition of the patient while going under ether. Other things being equal, those patients who took ether badly were apt to be more seriously sick than those who took it well.

Abdominal Drainage.—It is criminal, he thought, to remove gauze within forty-eight to seventy-two hours.

It should be left for at least eight days. The cigarette drains, so much used in New York, may well be likened to a sort of kindergarten method of getting pus out of the belly. He strongly urged and insisted upon the use of Fowler's position in the postoperative treatment of peritonitis.

Dr. E. LaPlace, of Philadelphia, said that in every case in which the patient died of appendicitis some one had been guilty of allowing the prime moment to pass unheeded. He agreed in every other detail with Dr. Deaver.

Dr. A. J. Ochsner said that children should be operated on early, and if not operated upon they should at least be put in Fowler's position. He agreed with Deaver in all the various classes of appendicular involvement except one, and he felt sure that inside of five years Deaver would come to his way of thinking. He quoted from one thousand cases upon each one of which he had operated upon at the Augustana Hospital, stating that including the cases of circumscribed peritonitis, his mortality had been but 2.2 per cent.

Dr. J. B. Murphy, of Chicago, said that he had learned to dread the subsidence of symptoms. He cited 16 cases of perforative peritonitis, which he had treated with but one death. Pus in the peritoneum, as elsewhere, is prone to absorb. This is the logical reason for simply cutting a hole and relieving the pressure. On the principle that handling is bad, there should be no washing and no manipulation of any sort.

Dr. Robert T. Morris, of New York, said that in answer to the accusation that the cigarette drains were suitable for the kindergarten practice of surgery, he would advise his friend from Philadelphia not to practise taxidermy upon his patient.

(To be Continued.)

SECTION OF OBSTETRICS AND DISEASES OF WOMEN.

FIRST DAY—JUNE 7, 1904.

Chairman's Address—Last Year's Progress in Gynecology. Senile Endometritis.—Dr. L. H. Dunning, of Indianapolis, after a brief discussion of what had been accomplished during the last year, considered the subject mentioned as the title of his paper. He expressed the belief that this complaint should be put in a class by itself. These cases were not as uncommon as ordinarily believed, as from his own experience he found that about three per cent. of the patients in his practice presented this condition. There were two varieties of the disease, the acute and the chronic. Of the former he reported a case in a woman of fifty-four years, who presented a mixed infection, one element of which was gonorrhea. The process rapidly spread to the surrounding tissues and in such cases may be sufficiently severe to demand complete hysterectomy. The chronic forms may also call for radical treatment, and he reported on the pathology of those conditions which closely resembled either carcinoma or adenoma of the cervix. The usual treatment advocated by Dr. Dunning was gradual dilatation with the tent and curettage. It is also necessary to thoroughly cure the vaginitis.

Carcinoma of the Uterine Cervix and Surrounding Tissues.—Dr. J. A. Sampson, of Baltimore, called attention to the high percentage of recurrences which followed the operative treatment for cancer of the cervix and claimed that this was sufficient evidence for the assumption that the growth had invaded the surrounding tissues at the time of the operation and that hysterectomy alone cured the disease in but a small proportion of cases. A study of the anatomical relations between

the cervix and the neighboring parts showed that this relation is varied by the position of the uterus in the pelvis and that the growth did not have to extend far anteriorly in order to involve the bladder, or laterally to reach or extend beyond the ureters. A study of the specimens obtained from the more radical operative cases demonstrated how the above takes place and emphasized the importance of a wide excision of the primary growth. The only hope of bettering the results, he believed, lay in an early diagnosis, and in these early cases doing the most radical operation possible. This would afford the best chance for a cure.

Electrothermic Clamps.—Dr. C. P. Noble, of Philadelphia, presented a critical analysis of the results secured by the use of the electrothermic clamps in the treatment of cancer of the uterus, and referred to the various accidents arising from the employment of the method. The nine cases which the writer reported were all unfavorable and not suitable to any other method of treatment. There was only one death, and that from secondary hemorrhage as the direct result of the operation. One of the after complications of this operation is the liability to the production of fistulae between the vagina and the bladder or ureter, which occurred in five of his cases. Two of these had closed, one was about to close and the other two remained open to date. He believed that in the advanced cases the electric clamp offered a very good chance for improving the condition, but considered that early diagnosis was the essential in all forms of treatment.

Primary Chorio-epithelioma Malignum Outside of the Placental Site.—Dr. Palmer Findley, of Chicago, after a general consideration of the subject and a review of the reported cases, presented an instance where the growth was primary in the uterine wall, with metastatic deposits in the vagina. The case reported was the twenty-first known. The woman had not menstruated for three years, then began again, accompanied by pain and vaginal discharge. There was also a menorrhagia. A radical operation was done and recurrences had been noted since the operation four months ago. The prognosis in such cases should always be guarded as no definite opinion can be given as to the degree of the distribution of metastatic deposits. The true nature of the growth should always be determined by pathological examination, as a case which he was about to report at this meeting turned out to be a carcinoma, containing collections of giant cells closely resembling syncytial masses.

The discussion of these three papers was begun by Dr. Wathen, of Louisville, who stated that although he advocated hysterectomy, he was entirely opposed to the extensive removal of the lymphatics as it was impossible to recognize and distinguish all the infected structures and the operation was unnecessarily prolonged.

Dr. G. B. Massey, of Philadelphia, called attention to the possibility of opening up new lymph channels by cutting operations and bringing on in this manner liability to infection from metastatic deposits. He thought cauterization preferable and claimed that a patient could stand 300 milliampères applied to the cervix without anesthesia. He also believed that interrupted applications of the cautery were preferable to a complete operation at one sitting.

Dr. A. L. Smith, of Montreal, said that he did not always find it well to wait for a pathological report but to go ahead and do an operation based on clinical evidence.

Dr. A. H. Cordier, of Kansas City, considered that good results could be had from the use of the thermocautery. The latter avoids the opportunities for infection, which had a marked influence on the rapidity of

later growth. After converting the elevated mass into a conical ulcer, he also applied carbide of calcium with good results.

Dr. J. H. Carstens, of Detroit, quoted from the recent work of Schauta, and insisted that our knowledge of the anatomy of this region was too limited to warrant extensive dissection here. The recurrences were also noted in the surrounding cellular tissue, which could not be removed. Unless the diagnosis had been sufficiently early to have done a vaginal hysterectomy, it was better to leave the case alone.

Dr. A. Goldspohn, of Chicago, said that the recurrences began in the vagina very often; he advocated a wide resection of this, rather than an extensive resection of the pelvic glands. He also claimed that it was safer to remove the uterus through the vagina, after it had been freed from above and the abdominal wall closed.

Others who took part in the discussion were Drs. Downes, Clark, Lawrence, Massey, Sandberg, Carey, Chandler, Humiston, and Theinhaus.

Technic of Wounds Incident to Laparotomy.—Dr. H. O. Marcy, of Boston, in tracing the history of this subject, referred to the modifications resulting from the introduction of antiseptic and aseptic methods. He called attention to the importance of closing as far as possible all peritoneal rents and abrasions, leaving no wounded surfaces within the abdominal cavity uncovered by healthy peritoneum. He described the method now employed by him, in which, after the peritoneum and fascia are sutured with absorbable animal sutures (cat-gut, kangaroo tendon), the skin wound is closed with a subcuticular suture of gut sufficiently fine to avoid causing infection from the sweat glands. Drainage was reserved for septic cases. In a clean case the wound was covered with iodoform collodion, and a further bandage is only applied when there was much vomiting expected.

The paper was discussed by Drs. Goldspohn, Orton, Longyear, Dorsett, and the Chairman, all of whom paid a high tribute to the value of Dr. Marcy's endeavors to introduce into surgery the employment of absorbable suture material.

The Appendiculo-ovarian Ligament.—Dr. D. H. Craig, of Boston, described the anatomy of this structure as first delineated by Clao and Durand, and called attention to the mechanical effect on the female pelvic organs, when the ligament is in a state of pathologic thickening and contraction. He claimed that the contraction probably very rarely, if ever, produces pure retroversion. He reported six cases personally observed by himself, in which the diagnosis had been made before operation. The chief symptom of the condition was tenderness along a line extending from McBurney's point to the ovary.

SECOND DAY—JUNE 8TH.

Diagnosis and Treatment of Pelvic Deformity.

Dr. Geo. Boyd, of Philadelphia, referred to the frequency of pelvic deformity in America at the present time. This called attention to the diagnostic value of the pelvimeter, and the necessity for a careful study of the size and position of the fetal ovoid. The several methods of estimating the relative disproportion between the pelvic canal and the fetal body were then gone into. The induction of premature labor would be the ideal procedure, if it were possible to estimate correctly the exact length of gestation. His own experiences in this had been unsatisfactory and he thought it best to let the pregnancy go to term in most cases. Each case, however, must be studied individually. The fetal head is the only trustworthy pelvimeter. In cases of moderate deformity, the test of previous labors was the essential determinative factor. In multiparæ, where there was a

history of previous labors with dead born children, Cæsarean section should be undertaken.

Dr. C. S. Bacon, of Chicago, thought that it would not be so difficult to estimate the length of pregnancy, if it were borne in mind that the morning sickness usually dated from the third or fourth week after conception, and the fetal movements from the eighteenth or nineteenth week. He believed that the high mortality in the children was due to lack of proper preparation, rather than to other causes.

Dr. Carey, of Chicago, stated that the prognosis in such cases depended on the size of the head as well as on the size of the pelvis, and also on the degree of ossification present in the fetal skull.

Heart Disease an Obstetric Complication.—Dr. C. S. Bacon, of Chicago, stated that heart disease might be due to pregnancy or labor, *e.g.*, myocarditis due to toxemia of eclampsia, and endocarditis due to puerperal infection. As preexisting heart disease did not interfere with pregnancy, its frequency corresponded to the frequency of the disease. The usual effect of heart disease on pregnancy was to cause abortion, and the effects of pregnancy on heart disease were dyspnea, bronchitis, edema, palpitation, indigestion, etc. Labor might cause sudden death. In the management of these cases, the patient's station in life and whether or not she was acquainted with her condition, determined the induction of labor. He did not think it advisable to await the spontaneous abortion. Where it was determined to carry the pregnancy to full term, the patient should assume the horizontal position as soon as any tendency to uterine contractions appeared. Opium might be given for considerable periods. During the puerperium, infection was particularly likely to occur, especially in the air passages. No nursing should be permitted and treatment should be kept up for at least three months. Among stimulants he believed that oxygen was the most valuable and trustworthy.

Dr. R. W. Holmes, of Chicago, claimed that opium should be stopped as soon as labor began, for he had seen a number of babies affected by the drug thus given. During the third stage he recommended bloodletting, and this could be accomplished by slow manual removal of the placenta. Only the smaller size bags should be used for dilatation, as the larger ones bring about an increase of intra-uterine pressure.

Dr. Carey, of Chicago, protested against the immediate removal of the placenta, as insufficient control of the hemorrhage was secured and too much danger from infection resulted.

Dr. A. O. Hastings, of Toronto, objected to manual extraction of the placenta and believed that better results could be secured from venesection. He had no bad experiences with morphine and considered it most valuable for the dyspnea. As the symptoms were often more alarming at the seventh month than they were later, he cautioned against the too early induction of labor.

Dr. Bacon, in conclusion, said that the patients needed stimulation after labor, especially by oxygen, rather than bloodletting. He also thought that the insufficient placental circulation caused the danger to the child rather than the morphine.

Cæsarean Section in Placenta Previa.—Dr. J. F. Moran, of Washington, discussed this important subject. Cæsarean section had been recommended by some writers during the last ten years, but in 24 operations by 21 operators, the maternal mortality was 20.5 per cent., and the infant mortality 24 per cent. These were all emergency operations and statistics of cases treated by other methods give a slightly lower maternal mortality, but a decidedly greater infant mortality. Present sta-

tistics were insufficient for guidance, but there was undoubtedly a limited field for the operation.

Dr. G. T. Harrison, of New York, considered that Cesarean section for placenta previa was not a suitable surgical interference and opposed the procedure. He had never seen a case where it had been indicated in preference to other plans of obstetrical treatment.

Dr. F. F. Lawrence, of Columbus, Ohio, favored the procedure in so far as it afforded an absolute means of controlling hemorrhage and sepsis. Pulling down the foot does not control bleeding as uterine inertia is usually present.

Dr. Holmes, of Chicago, claimed that the only cases in which the operation should be done were those with a rigid os or a contracted pelvis. The statistics presented thus far were compiled by gynecologists rather than by obstetricians, and did not present a fair judgment of the subject.

Dr. Dorsey considered that placenta previa was serious enough to warrant the induction of premature labor, but the time when the patient was first seen really determined the course to be pursued.

The Difficulties and Dangers of Accouchement Forcé.—Dr. H. G. Wetherill, of Denver, believed that the present manual methods were dangerous and slow, and that the instrumental methods, in addition, required expensive special apparatus, often unavailable when most needed. For this reason he recommended the employment of graduated sizes of the Sym's duck-bill speculum for the purpose of dilating the cervix. The latter was properly grasped with tenacula, and the smaller sizes introduced after sufficient dilatation had been secured with a uterine dilator. A speculum could be held in each hand and stretching secured by a rocking motion. He reported two cases in which the method was successfully used (toxemia, without convulsions, but with retinitis).

Dr. J. H. Carstens, of Detroit, stated that such a method was too slow and he preferred vaginal Cesarean section in such toxic cases.

Dr. R. W. Holmes, of Chicago, believed that the os was usually too high to permit of the introduction of these specula and that the tenacula were liable to tear out. A number of others also spoke against the advisability of the method.

Repair of the Anterior Vaginal Wall after Labor.—Dr. B. C. Hirst, of Philadelphia, read this paper, in which he called attention to the importance of examining all women after delivery in order to detect injuries of the urogenital diaphragm in the anterior wall of the vagina, the urogenital muscle and its fascia. This should be done digitally by preference, and the reader claimed that it was feasible to repair the injury primarily, although it might be submucous. He detailed the best form of operation for a cystocele when developed and considered that it might be safely done within five days after delivery without danger. The report of a large number of cases from the author's operative service followed.

New Operation for Cystocele.—Dr. J. Riddle Goffe, of New York, believed that cystocele in virgins and nulliparæ was usually due to supravaginal elongation of the cervix. This brought about a general descensus of the upper support of the vagina and the anterior vaginal wall, and a consequent prolapse of the bladder. In multiparæ cystocele was a frequent accompaniment of retro-position of the uterus, sometimes descensus and prolapse of that organ. When these conditions did not exist, cystocele partook of the character of a true hernia. He then commented on the inefficiency of previous operations and the reasons for this, as they do not take into account the true anatomical conditions. In the

operation which he suggested, the bladder was freed from its attachments through a T-shaped incision in the anterior vaginal wall, and stitched by means of three sutures, to the uterus and the broad ligaments on either side. This avoids a folding of the base of the bladder and the formation of pockets. It also prevents shortening of the anterior wall. He reported eight successful cases.

The discussion on these two papers was combined. Dr. Price, of Philadelphia, insisted that intermediate repair was not good surgery, and was unsafe on account of the septic condition of the vaginal canal. Others who discussed the papers were Drs. Chandler, Stone, Bovée, and Burtenshaw. The latter thought that the broad ligaments were too friable for the attachment of the bladder. Dr. Holmes claimed that a cystocele during the first few days after delivery was a physiological condition, and that time should elapse before any operation be undertaken.

Repair of Pelvic Floor Lacerations.—Dr. J. Hawley Burtenshaw, of New York, pointed out the advantages from immediate repair of lacerations and said that the failure to obtain good results was usually due to lack of appreciation of the pathology. He claimed that few modern operations of secondary perineorrhaphy accomplished what was alleged for them. They reduced the lumen of the canal and partially closed the outlet, but did not restore the floor to the normal. Vaginal sulci might frequently be demonstrated in women without laceration of the levator, and therefore their presence was not pathognomonic of laceration. In order to close muscular rents, their edges must be raw and closely approximated, and held so until united. Most posterior wall surgery did not expose levator ani muscle and fascia, but the muscular wall was partially denuded and backed up against itself, in which position the surfaces united. Nothing more was gained by Emmet's operation than by Hegar's, because denudation in each was superficial. The muscular walls of the vagina should be firmly anchored to the sphincter vaginæ, to other muscular structures at the orifice and to a movable organ, the uterus. The introduction of sutures in the sulci by the Emmet method had a marked tendency to draw the wall downward and thus increased the traction on an already retrodisplaced womb.

Treatment of Complete Uterine and Vaginal Prolapse.—Dr. F. H. Wiggin, of New York, stated that this condition is practically a reducible hernia through the pelvic floor, due primarily to the separation of the tendons of the muscles forming this floor and the consequent formation of a rectocele. The indications for treatment were, the reduction of the hernia, the obliteration of the sac, the repair of the pelvic floor and the removal of redundant tissue on the anterior vaginal wall. In the reader's experience the obliteration of the sac was best accomplished by intra-abdominal support obtained by means of purse-string sutures passed through the body of the uterus and broad ligaments on either side.

Multiple Abscesses of the Omentum Following Grave Septic Peritonitis.—Dr. H. O. Pantzer, of Indianapolis, read this paper and reported two cases.

(To be Continued.)

SECTION ON PEDIATRICS.

FIRST DAY—JUNE 7TH.

The first session was called to order on Tuesday, June 7, at 2.30 P.M., with Dr. Charles G. Kerley, of New York, presiding.

The Chairman's Address: The Demands of the Child by Virtue of Right.—After extending a wel-

come to the members and guests, Dr. Kerley gave some of his impressions and thoughts which were the result of sixteen years' observation of children. He emphasized the importance which is given to the care of domestic animals, the mother is nourished and kept under conditions favorable to the production of a healthy offspring and the young animal is even more carefully fostered. Only by so doing may the highest type be produced. This principle is recognized by the National Department of Agriculture, which makes practical application of these facts in the rearing of domestic animals. The physician should realize the still greater importance of the necessity of his supervision of the conditions surrounding the unborn child and of the proper nourishment, cleanliness and environment generally of the growing child. Each year should produce its proper growth. Lost or retarded growth could never be made up in a later year and always showed in maturity. Instincts in animals tells them what they shall eat. It tells man nothing, but he may be taught, and the physician must do this. In a series of observation among children of the laboring classes of New York, only twenty per cent. were found normally developed. The large percentage of the poorly developed was due not to insufficient food but to the wrong kind of food. Early management therefore and particularly early nutrition of the child become of the greatest importance to the State, and education of mothers in all that conduces to the production of healthy children is our public duty as physicians. One reason why country children are generally stronger than city children lies in the fact that country mothers more frequently prepare the food while the city mother depends upon food already prepared. Heredity is an important factor in the development of the child, but nutrition and cleanliness are of far greater importance. Many vocations now require a physical examination to prove the eligibility of the adult and the public has a right to demand this, but the child also has an equal right to a proper preparation for this condition. From the lack of this proper physical preparation of the child, criminals, degenerates and weaklings have been produced. A study of children in the New York Children's Court fully demonstrates the truth of this statement. Most of these were found to be underdeveloped, anemic and dirty, while not one-third of them had proper home surroundings. A merchant in New York City had, after physical examination, rejected 240 out of 250 applicants for positions requiring physical strength in young women. The condition of children in England, where 60 per cent. are underfed, is worse than in America, and there is cause for fear of the mental degeneration of children in the future unless the tendency of present conditions is altered. This should be done by governmental prevention of overcrowding and unhealthy conditions, such as are found in our large cities. Since ignorance is the larger cause of the improper conditions surrounding children the physicians who alone are particularly fitted to do so should teach the mother how to properly rear her children. It seems that the future of the United States depends upon the doctors more than upon any other calling.

Erythema Nodosum in Children.—In discussing this rare disease Dr. Isaac A. Abt, of Chicago, said that the older and also the modern writers are not agreed upon the differentiation between the two varieties of erythema nodosum and erythema multiforme, but, he believes, that certainly erythema nodosum belongs among the exanthematous diseases, although Levene thinks that it is developed upon an angioneurotic basis and Fenger that it is due to a septic process. The disease occurs in anemic children or in those in a depressed condition

from any cause, but it may occur in healthy individuals and generally appears from the second to the fourteenth year. Gastro-intestinal and other symptoms such as occur in exanthematous diseases are present at the beginning. The nodes which appear on the dorsum of the feet upon the legs, thighs or forearms are round or oval and vary from the size of a walnut to that of a hen's egg. They have no well defined border and two never coalesce. They are firm to pressure, and painful. The skin over them is tense, and at first bright red, but in a day or two this becomes dull red or bluish and subsequently undergoes the color changes observed in a bruise. Together with these changes there is observed a subsidence of the pain, swelling and constitutional symptoms; but there are usually repeated crops. The nodes may appear in the mouth and break down, forming ulcers. The duration of a crop of nodes is from eight to fourteen days, while the time from the appearance of the first symptoms to the disappearance of the last crop of nodes may be three or four and sometimes even eight weeks. Some writers on the subject have believed rheumatism an etiological factor in erythema nodosum, but that clinical observations have not upheld this theory. The pain present in erythema nodosum, upon which those who have held this idea have based their belief, is also present in other exanthematous diseases, notably scarlet fever, measles, and smallpox, and that therefore this belief may not be well founded. The pain during the prodromal stage was due largely to the tensing of the skin at the site of the nodes. Endocarditis, septic in form, and meningitis also occur at times. Some writers have claimed that there is a connection between tuberculosis and erythema nodosum, but this has been disproved, particularly by Kühn. However, the relation, as shown clinically, is an intensely interesting one. Infectious diseases do prepare the way for erythema nodosum and many sequelæ similar to those which occur after the exanthematous diseases are likely to follow.

Dr. Liebenenthal, of Chicago, suggested that the confusion in the classification of erythema nodosum as distinguished from erythema exsudativum might be lessened by remembering that one begins on the dorsum of the foot while the other appears first on the dorsum of the hands, and that the microscopical pathological findings were very similar to those present in urticaria.

Whooping-cough—A Study of Seventeen Cases Treated with the Elastic Abdominal Belt.—Dr. T. W. Kilmer, of New York, said that he had applied this treatment to seventeen consecutive (not selected) cases and that the method was to apply a stockinette band extending from the axillæ to the hips and over this an elastic bandage of similar material to that used in elastic stockings, putting it slightly on the stretch and stitching the upper and lower edges to the stockinette band to prevent curling. If necessary to produce the desired results the bandage may be made tight. He showed charts of his cases indicating the ratio in frequency of the cough to the vomiting. During the first week of observation the child being only under placebo treatment this was as twelve to eight. After he applied the belt, at the end of one week he said the results were always marked, sometimes spectacular, and only in one case in eighteen did he fail to stop the vomiting, while in only six was there failure to stop or greatly lessen the cough, and in one case in which the coughing and vomiting had been entirely stopped by the application of the belt they began again when the belt was removed by the mother. He said incidentally that this method of treatment had been tried with success in the vomiting of pregnancy and in conclusion that he thought the application of the elastic belt should be given a fair and impartial trial in the treatment of whooping-cough, since

in his experience it had apparently aborted many cases and had practically stopped the vomiting in all but one of the other.

Dr. Bernhardt, of Butte, Mont., suggested that perhaps the impossibility of the inspiration might be the cause of lessened cough.

Dr. Kerley said that he had seen the cases reported upon and noted the particular efficiency of the treatment in children of one year in whom the administration of drugs is difficult.

Dr. Gilbert, of Louisville, Ky., suggested the danger of hernia, since this sometimes occurs in the new-born after the application of the ordinary abdominal binder, and asked Dr. Kilmer's theory as to the cause of favorable results.

Dr. Kilmer said, in closing, that the action of the belt was of course purely mechanical, that he had no case of hernia following the application of the belt and that in the cases reported he had given no other treatment and compared this treatment to the relief known to follow application of pressure over the stomach in sea sickness.

Malnutrition and Infantile Tuberculosis.—Dr. Louis Fischer, of New York, said that in the study of five thousand ordinary clinic cases of children belonging to the poorer classes the appearance of tuberculosis was noted in fifty-nine of them, and in seventeen hundred of the cases there was some form of pharyngeal or laryngeal disease, but no tuberculosis of the lungs or other organs. He said that of the tuberculous patients only two were breast fed, and in these the mothers were poorly nourished and in no condition to nurse their babies, and that most of the tuberculosis cases showed improper nourishment as shown by poor frame, weak bones, flabby muscles and other evidences of rickets. His cases had been corroborative of the facts shown in the literature on the subject, and he thought that the majority of tuberculosis babies were bottle-fed babies, therefore the importance of cow's milk. He said that opinion was divided as to the route of invasion in tuberculosis, but that there were good reasons for believing that either the bronchial or the mesenteric glands might be first infected, and mentioned Dr. Osler as favoring the former and Dr. Delafeld the latter route to the lungs. As to prophylaxis, Dr. Fischer said that if possible all babies should be breast-fed, so that the danger of faulty feeding is lessened, and in this connection he said that perhaps the serum of mother's milk may contain an immunizing substance acting in the child antagonistically to the tubercle bacillus, and that fresh air and sunshine were of equal importance.

Dr. Jacobi, of New York, said that if he were asked what he would do with the tenement house baby if its mother were tuberculous he would say, don't allow her to nurse her baby, not that the milk was dangerous, although it might be, but because of the danger to the child because of her expectoration and the particles of sputum scattered about when she coughed. If the baby be removed from the mother its chances of growing up well and strong are greatly increased, but if it remains with the mother it will almost certainly become tuberculous. He said that milk from one cow is always dangerous, but that the danger is greatly lessened when a baby is fed with the mixed milk of a herd. He also said that intestinal tubercularization is certain and that he had demonstrated tubercle bacilli in ascitic fluid post mortem in a case where there were no lesions of the mucous membrane of the intestines, thus proving that the bacilli may pass through healthy tissues and that this was true also of lung tissue. Infections through the nose also occur, but that in reality it is not an infection by inhalation for the bacilli lodge in the pharynx

and larynx, and when conditions permit infection occurs from there through the lymph spaces to the glandular structures of the neck and mediastinum.

Dr. W. B. Ulrich, of Chester, Pa., said that there is a tuberculous diathesis in children of tuberculous parents and that the beginning of prophylaxis should be in the control of marriage and that a tuberculous mother should not have children.

Dr. Fischer said, in closing, that the tuberculous mother certainly should be isolated from her child, and also, if possible, from her husband. He said also that a large percentage of children infected with tubercle bacilli had been previously fed upon condensed milk and that this was the cause of a poorly nourished condition of children.

(To be Continued.)

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Place of meeting for 1905, Portland, Oregon.

BOOK REVIEWS.

LESSONS ON THE EYE FOR THE USE OF UNDERGRADUATE STUDENTS. By FRANK L. HENDERSON, Ophthalmic Surgeon to the St. Mary's Infirmary and the Christian Orphan's Home, Consulting Oculist to the St. Louis City Hospital, The Wabash Railroad, etc. Third edition. P. Blakiston's Son & Co., Philadelphia.

THIS book will no doubt serve an excellent purpose among the very numerous examples of its class, intended simply for students. It is a little hard to distinguish individual merits where much is necessarily omitted, and the chief virtue seems to be the selection of what is indispensable for passing examinations. In this book, however, the virtue of brevity is not sacrificed, and a broader point of view is to a certain extent retained. The illustrations are better than those in other books of the same caliber and not too numerous.

NEW PSYCHOLOGY. By J. P. GORDY, Ph.D., LL.D., Head of the Pedagogical Department of the Ohio State University. Hinds and Noble, New York.

PSYCHOLOGY has become of ever-increasing interest in recent years for the physician. The newer psychology especially, because of its practical bearings, has proved useful. The present little manual serves well the purpose of an introduction to the new psychology and while it is meant for the teacher rather than for the physician it cannot but be suggestive to those interested in varying mental states. Some idea of its popularity may be gathered from the fact that though the first edition was published in 1898, it had reached its twelfth edition before 1903, and is still in demand. The book was written principally for the benefit of that large number of progressive young teachers who have not enjoyed the benefits of a college education and consequently is likely to be of service especially to those who have not had previous instruction in psychology. The arrangement of the book is such as to commend itself and there is a logical gradation in the method of imparting successive steps in psychology that constantly keeps up the interest.